SEQUENCE LISTING

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<120> Mammalian Cell Surface DNA Receptor

<130> 00-617-F

<140> US 10/619992
<141> 2003-07-15

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Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
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gcg gat ttc tca gag agt gtg agt ggt aca aaa ttt gaa gaa gat cat    3097
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cct gat  gga caa agt gaa cca  att gaa gag atc ttg  gac ata cag        3850
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        1100                    1105                    1110

aag cag  aag aaa cag agt tta  ggt gaa gac cat gtg  att ctg gag        3985
Lys Gln  Lys Lys Gln Ser Leu  Gly Glu Asp His Val  Ile Leu Glu
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gag caa  aaa aca att ctg ccg  gta act tct tgc ttt  agc cag cca        4030
Glu Gln  Lys Thr Ile Leu Pro  Val Thr Ser Cys Phe  Ser Gln Pro
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Leu Pro  Val Ser Ile Ser Asn  Ala Ser Cys Leu Pro  Ile Thr Thr
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Ser Val  Ser Ala Gly Asn Leu  Ile Leu Lys Thr His  Val Met Ser
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Glu Asp  Lys Asn Asp Phe Leu  Lys Pro Val Ala Asn  Gly Lys Met
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Val Asn  Ser
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Cys Ser His Thr Val Cys Lys Thr Cys Leu Asn Lys Leu His Arg Lys
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Pro Val Asn Phe Ala Leu Leu Gln Leu Val Gly Ala Gln Val Pro Asp
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His Gln Ser Ile Lys Leu Ser Asn Leu Gly Glu Asn Lys His Tyr Glu
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Val Ala Lys Lys Cys Val Glu Asp Leu Ala Leu Tyr Leu Lys Pro Leu
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Arg Thr Val Thr Glu Leu Ile Leu Gln His Gln Asn Pro Gln Gln Leu
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Ser Ala Asn Leu Trp Ala Ala Val Arg Ala Arg Gly Cys Gln Phe Leu
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Val Asn Asn Thr Val Thr Thr Thr Ala Gly Asn Val Ile Ser Val Ile
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Gln Lys Ser Ser Pro Phe Leu Thr Arg Val Pro Val Tyr Pro Pro His
            580             585                 590

Ser Glu Asn Ile Gln Tyr Phe Gln Asp Pro Arg Thr Gln Ile Pro Phe
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Glu Val Pro Gln Tyr Pro Gln Thr Gly Tyr Tyr Pro Pro Pro Pro Thr
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Val Pro Ala Gly Val Ala Pro Cys Val Pro Arg Phe Val Arg Ser Asn
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Asn Val Pro Glu Ser Ser Leu Pro Pro Ala Ser Met Pro Tyr Ala Asp
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His Tyr Ser Thr Phe Ser Pro Arg Asp Arg Met Asn Ser Ser Pro Tyr
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Gln Pro Pro Pro Pro Gln Pro Tyr Gly Pro Val Pro Pro Val Pro Ser
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Gly Met Tyr Ala Pro Val Tyr Asp Ser Arg Arg Ile Trp Arg Pro Pro
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Met Tyr Gln Arg Asp Asp Ile Ile Arg Ser Asn Ser Leu Pro Pro Met
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Asp Val Met His Ser Ser Val Tyr Gln Thr Ser Leu Arg Glu Arg Tyr
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Asn Ser Leu Asp Gly Tyr Tyr Ser Val Ala Cys Gln Pro Pro Ser Glu
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Pro Arg Thr Thr Val Pro Leu Pro Arg Glu Pro Cys Gly His Leu Lys
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Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
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Tyr His Thr Gln Lys Ala Pro Leu Val Ser Ser Thr Leu Pro Val Ala
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Ala Asp Phe Ser Glu Ser Val Ser Gly Thr Lys Phe Glu Glu Asp His
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Leu Ser His Tyr Ser Pro Trp Ser Cys Gly Thr Ile Gly Ser Cys Ile
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Glu Leu Gln Ser Asp Tyr Thr Glu Asp Ala Thr Asp Thr Lys Pro
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Asp Arg Asp Ile Glu Leu Glu Leu Ser Ala Leu Asp Thr Asp Glu
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Leu Gly Ile Ser Ser Gln Asn Asp Gln Leu Leu Asn Gly Met Ala
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Val Glu Asn Gly His Pro Val Gln Gln His Gln Lys Glu Pro Pro
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Lys Gln Lys Lys Gln Ser Leu Gly Glu Asp His Val Ile Leu Glu
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gtctctacaa tattgtttgg atcagtagtt ccaaagttc attaactcct ggccatactt       120

tattatgttt tggggtactg gttatccaag ggaaacactt ttttaaacaa caaaacaaaa      180

aaaccgccca gcagtccaaa gtaatttgtg ttcctaaaaa tggaatatgg aaagttaatt      240
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tgcttgtttg atgtggtcgt tgagaaaaat acataaaagc tttgatgttt attatgtgag      300

caaccaatat aaatacagtt tagttgaaag gaacactatt aaggtattgt ttccaggcag      360

aatttcagaa atgtaattaa ttcagcaaat aggttttta aaaaagacat ccaaaggtta       420

taaaattatt tagaagtatt ttaggtctga agctgtaata gttgacttaa gcaattaact      480

cttcaaaggt gaatgatgaa tatgtggtta attcatactt ttgtccattt ctagcttaca      540

aaacactaca cagcaaaata atgatctgct agactgctaa cccgagcatc cagcttccac      600
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a atg gct gtg cag gca gct caa tgg aca gaa ttt ctg tcc tgt cca atc      649
  Met Ala Val Gln Ala Ala Gln Trp Thr Glu Phe Leu Ser Cys Pro Ile
  1               5                   10                  15

tgc tat aat gaa ttt gat gag aat gtg cac aaa ccc atc agt tta ggt       697
Cys Tyr Asn Glu Phe Asp Glu Asn Val His Lys Pro Ile Ser Leu Gly
            20                  25                  30

tgt tca cac act gtt tgc aag acc tgc ttg aat aaa ctt cat cga aaa       745
Cys Ser His Thr Val Cys Lys Thr Cys Leu Asn Lys Leu His Arg Lys
        35                  40                  45

gct tgt cct ttt gac cag act gcc atc aac aca gat att gat gta ctt       793
Ala Cys Pro Phe Asp Gln Thr Ala Ile Asn Thr Asp Ile Asp Val Leu
    50                  55                  60

cct gtc aac ttc gca ctt ctc cag tta gtt gga gcc cag gta cca gat      841
Pro Val Asn Phe Ala Leu Leu Gln Leu Val Gly Ala Gln Val Pro Asp
65                  70                  75                  80

cat cag tca att aag tta agt aat cta ggt gag aat aaa cac tat gag      889
His Gln Ser Ile Lys Leu Ser Asn Leu Gly Glu Asn Lys His Tyr Glu
                85                  90                  95

gtt gca aag aaa tgc gtt gag gat ttg gca ctc tac tta aaa cca cta      937
Val Ala Lys Lys Cys Val Glu Asp Leu Ala Leu Tyr Leu Lys Pro Leu
            100                 105                 110

agt gga ggt aaa ggt gta gct agc ttg aac cag agt gca ctg agc cgt      985
Ser Gly Gly Lys Gly Val Ala Ser Leu Asn Gln Ser Ala Leu Ser Arg
        115                 120                 125

cca atg caa agg aaa ctg gtg aca ctt gta aac tgt caa ctg gtg gag     1033
Pro Met Gln Arg Lys Leu Val Thr Leu Val Asn Cys Gln Leu Val Glu
    130                 135                 140

gaa gaa ggt cgt gta aga gcc atg cga gca gct cgt tcc ctt gga gaa     1081
Glu Glu Gly Arg Val Arg Ala Met Arg Ala Ala Arg Ser Leu Gly Glu
145                 150                 155                 160

aga act gta aca gaa ctg ata tta cag cac cag aac cct cag cag ttg     1129
Arg Thr Val Thr Glu Leu Ile Leu Gln His Gln Asn Pro Gln Gln Leu
                165                 170                 175

tct gcc aat cta tgg gcc gct gtc agg gct cga gga tgc cag ttt tta     1177
Ser Ala Asn Leu Trp Ala Ala Val Arg Ala Arg Gly Cys Gln Phe Leu
                180                 185                 190

ggg cca gct atg caa gaa gag gcc ttg aag ctg gtg tta ctg gca tta     1225
Gly Pro Ala Met Gln Glu Glu Ala Leu Lys Leu Val Leu Leu Ala Leu
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gaa gat ggt tct gcc ctc tca agg aaa gtt ctg gta ctt ttt gtt gtg   1273
Glu Asp Gly Ser Ala Leu Ser Arg Lys Val Leu Val Leu Phe Val Val
210   215   220

cag aga cta gaa cca aga ttt cct cag gca tca aaa aca agt att ggt   1321
Gln Arg Leu Glu Pro Arg Phe Pro Gln Ala Ser Lys Thr Ser Ile Gly
225   230   235   240

cat gtt gtg caa cta ctg tat cga gct tct tgt ttt aag gtt acc aaa   1369
His Val Val Gln Leu Leu Tyr Arg Ala Ser Cys Phe Lys Val Thr Lys
245   250   255

aga gat gaa gac tct tcc cta atg cag ctg aag gag gaa ttt cgg agt   1417
Arg Asp Glu Asp Ser Ser Leu Met Gln Leu Lys Glu Glu Phe Arg Ser
260   265   270

tat gaa gca tta cgc aga gaa cat gat gcc caa att gtt cat att gcc   1465
Tyr Glu Ala Leu Arg Arg Glu His Asp Ala Gln Ile Val His Ile Ala
275   280   285

atg gaa gca gga ctc cgt att tca cct gaa cag tgg tcc tct ctt ttg   1513
Met Glu Ala Gly Leu Arg Ile Ser Pro Glu Gln Trp Ser Ser Leu Leu
290   295   300

tat ggt gat ttg gct cat aaa tca cac atg cag tct atc att gat aag   1561
Tyr Gly Asp Leu Ala His Lys Ser His Met Gln Ser Ile Ile Asp Lys
305   310   315   320

cta cag tct cca gag tca ttt gca aag agt gtc cag gaa ttg aca att   1609
Leu Gln Ser Pro Glu Ser Phe Ala Lys Ser Val Gln Glu Leu Thr Ile
325   330   335

gtt ttg caa cga aca ggt gac cca gct aac tta aat aga ctg agg cct   1657
Val Leu Gln Arg Thr Gly Asp Pro Ala Asn Leu Asn Arg Leu Arg Pro
340   345   350

cat tta gag ctt ctt gca aac ata gac cct aat cca gac gct gtt tca   1705
His Leu Glu Leu Leu Ala Asn Ile Asp Pro Asn Pro Asp Ala Val Ser
355   360   365

cca act tgg gag cag ctg gaa aat gca atg gta gct gtt aaa aca gta   1753
Pro Thr Trp Glu Gln Leu Glu Asn Ala Met Val Ala Val Lys Thr Val
370   375   380

gtt cat ggc ctt gtg gac ttc ata caa aat tat agt aga aaa ggc cat   1801
Val His Gly Leu Val Asp Phe Ile Gln Asn Tyr Ser Arg Lys Gly His
385   390   395   400

gag acc cct cag cct cag cca aac agc aaa tac aag act agc atg tgc   1849
Glu Thr Pro Gln Pro Gln Pro Asn Ser Lys Tyr Lys Thr Ser Met Cys
405   410   415

cga gat ttg cga cag cag ggg ggt tgt cca cga gga aca aat tgt aca   1897
Arg Asp Leu Arg Gln Gln Gly Gly Cys Pro Arg Gly Thr Asn Cys Thr
420   425   430

ttt gcc cat tct cag gaa gag ctt gaa aag tat cga tta agg aac aaa   1945
Phe Ala His Ser Gln Glu Glu Leu Glu Lys Tyr Arg Leu Arg Asn Lys
435   440   445

aag atc aat gcc act gta aga acg ttt cct ctt cta aat aaa gtt ggt   1993

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Lys Ile Asn Ala Thr Val Arg Thr Phe Pro Leu Leu Asn Lys Val Gly
450                 455             460

gta aac aac act gtc aca acc aca gcc gga aat gtc att tct gtc ata    2041
Val Asn Asn Thr Val Thr Thr Thr Ala Gly Asn Val Ile Ser Val Ile
465             470             475             480

gga agt act gaa aca aca ggg aaa att gtt cca agt aca aac gga att    2089
Gly Ser Thr Glu Thr Thr Gly Lys Ile Val Pro Ser Thr Asn Gly Ile
                485             490             495

tca aat gca gaa aac agt gtt tcc cag cta atc tca cgt agt act gac    2137
Ser Asn Ala Glu Asn Ser Val Ser Gln Leu Ile Ser Arg Ser Thr Asp
                500             505             510

agt acc tta aga gct ctg gag acc gtg aag aaa gtg gga aag gtt ggc    2185
Ser Thr Leu Arg Ala Leu Glu Thr Val Lys Lys Val Gly Lys Val Gly
                515             520             525

gct aat ggt cag aat gct gct ggg ccc tct gca gat tct gta act gaa    2233
Ala Asn Gly Gln Asn Ala Ala Gly Pro Ser Ala Asp Ser Val Thr Glu
                530             535             540

aat aaa att ggt tct cca ccc aag act cct gta agt aat gta gca gct    2281
Asn Lys Ile Gly Ser Pro Pro Lys Thr Pro Val Ser Asn Val Ala Ala
545             550             555             560

acc tca gct ggg ccc tct aat gtt gga aca gag ctg aat tct gtg cct    2329
Thr Ser Ala Gly Pro Ser Asn Val Gly Thr Glu Leu Asn Ser Val Pro
                565             570             575

caa aaa tcc agc cca ttt cta act aga gta cca gta tat cct ccg cat    2377
Gln Lys Ser Ser Pro Phe Leu Thr Arg Val Pro Val Tyr Pro Pro His
                580             585             590

tct gaa aac att cag tat ttt caa gat cca agg act cag ata ccc ttt    2425
Ser Glu Asn Ile Gln Tyr Phe Gln Asp Pro Arg Thr Gln Ile Pro Phe
                595             600             605

gaa gtc cca cag tac cca cag aca gga tac tat cca cca cct cca acg    2473
Glu Val Pro Gln Tyr Pro Gln Thr Gly Tyr Tyr Pro Pro Pro Thr
610             615             620

gta cca gct ggt gtg gct ccc tgt gtt cct cgc ttt gtg agg tcc aat    2521
Val Pro Ala Gly Val Ala Pro Cys Val Pro Arg Phe Val Arg Ser Asn
625             630             635             640

aac gtt cca gag tcc tcc ctc cca cct gct tcc atg cca tat gcc gat    2569
Asn Val Pro Glu Ser Ser Leu Pro Pro Ala Ser Met Pro Tyr Ala Asp
                645             650             655

cat tac agt aca ttt tcc cct cga gat cga atg aat tct tct cct tac    2617
His Tyr Ser Thr Phe Ser Pro Arg Asp Arg Met Asn Ser Ser Pro Tyr
                660             665             670

cag cct cct cct ccg cag ccg tat gga cca gtt cct cca gta cct tct    2665
Gln Pro Pro Pro Pro Gln Pro Tyr Gly Pro Val Pro Pro Val Pro Ser
                675             680             685

gga atg tat gct cct gtg tac gac agc agg cgc atc tgg cgc cca cct    2713
Gly Met Tyr Ala Pro Val Tyr Asp Ser Arg Arg Ile Trp Arg Pro Pro
690             695             700
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atg tac caa cga gat gac att att aga agc aat tct tta cct cca atg    2761
Met Tyr Gln Arg Asp Asp Ile Ile Arg Ser Asn Ser Leu Pro Pro Met
705             710             715             720

gat gtg atg cac tca tct gtc tat cag aca tct ttg cgg gaa aga tat    2809
Asp Val Met His Ser Ser Val Tyr Gln Thr Ser Leu Arg Glu Arg Tyr
                725             730             735

aac tca tta gat gga tat tat tcg gtg gct tgt cag cca cca agt gag    2857
Asn Ser Leu Asp Gly Tyr Tyr Ser Val Ala Cys Gln Pro Pro Ser Glu
            740             745             750

cca agg aca act gtg cct tta cca agg gaa cct tgt ggt cat ttg aag    2905
Pro Arg Thr Thr Val Pro Leu Pro Arg Glu Pro Cys Gly His Leu Lys
        755             760             765

acc agt tgc gag gag cag ata aga aga aag cca gat cag tgg gca cag    2953
Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
        770             775             780

tac cac act cag aaa gca cct ctt gtc tct tca act ctt cct gtg gca    3001
Tyr His Thr Gln Lys Ala Pro Leu Val Ser Ser Thr Leu Pro Val Ala
785             790             795             800

aca cag tca cca aca cca cct tct cct ctg ttc agt gta gac ttt cgt    3049
Thr Gln Ser Pro Thr Pro Pro Ser Pro Leu Phe Ser Val Asp Phe Arg
                805             810             815

gcg gat ttc tca gag agt gtg agt ggt aca aaa ttt gaa gaa gat cat    3097
Ala Asp Phe Ser Glu Ser Val Ser Gly Thr Lys Phe Glu Glu Asp His
            820             825             830

ctt tcc cat tat tct ccc tgg tct tgt ggc acc ata ggc tcc tgt ata    3145
Leu Ser His Tyr Ser Pro Trp Ser Cys Gly Thr Ile Gly Ser Cys Ile
        835             840             845

aat gcc att gat tca gag ccc aaa gat gtc att gct aat tca aat gct    3193
Asn Ala Ile Asp Ser Glu Pro Lys Asp Val Ile Ala Asn Ser Asn Ala
        850             855             860

gtg tta atg gac ctg gac agt ggt gat gtt aag aga aga gta cat tta    3241
Val Leu Met Asp Leu Asp Ser Gly Asp Val Lys Arg Arg Val His Leu
865             870             875             880

ttt gaa acc cag aga agg aca aaa gaa gaa gat cca ata att ccc ttt    3289
Phe Glu Thr Gln Arg Arg Thr Lys Glu Glu Asp Pro Ile Ile Pro Phe
                885             890             895

agt gat gga ccc atc atc tca aaa tgg ggt gcg att tcc aga tct tcc    3337
Ser Asp Gly Pro Ile Ile Ser Lys Trp Gly Ala Ile Ser Arg Ser Ser
            900             905             910

cgt aca ggt tac cat acc aca gat cct gtc cag gcc act gct tcc caa    3385
Arg Thr Gly Tyr His Thr Thr Asp Pro Val Gln Ala Thr Ala Ser Gln
        915             920             925

gga agt gcg act aag ccc atc agt gta tca gat tat gtc cct tat gtc    3433
Gly Ser Ala Thr Lys Pro Ile Ser Val Ser Asp Tyr Val Pro Tyr Val
        930             935             940

aat gct gtt gat tca agg tgg agt tca tat ggc aac gag gcc aca tca    3481
Asn Ala Val Asp Ser Arg Trp Ser Ser Tyr Gly Asn Glu Ala Thr Ser
945             950             955             960
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Page 15

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tca gca cac tat gtt gaa agg gac aga ttc att gtt act gat tta tct      3529
Ser Ala His Tyr Val Glu Arg Asp Arg Phe Ile Val Thr Asp Leu Ser
            965             970             975

ggt cat aga aag cat tcc agt act ggg gac ctt ttg agc ctt gaa ctt      3577
Gly His Arg Lys His Ser Ser Thr Gly Asp Leu Leu Ser Leu Glu Leu
            980             985             990

cag cag gcc aag agc aac tca tta ctt ctt cag aga gag gcc aat gct      3625
Gln Gln Ala Lys Ser Asn Ser Leu Leu Leu Gln Arg Glu Ala Asn Ala
            995             1000            1005

ttg gcc atg caa cag aag tgg aat tcc ctg gat gaa ggc cgt cac         3670
Leu Ala Met Gln Gln Lys Trp Asn Ser Leu Asp Glu Gly Arg His
    1010            1015            1020

ctt acc tta aac ctt tta agc aag gaa att gaa cta aga aat gag         3715
Leu Thr Leu Asn Leu Leu Ser Lys Glu Ile Glu Leu Arg Asn Glu
    1025            1030            1035

tta cag agt gat tat aca gaa gat gca aca gat act aaa cct gat         3760
Leu Gln Ser Asp Tyr Thr Glu Asp Ala Thr Asp Thr Lys Pro Asp
    1040            1045            1050

agg gat atc gag tta gag ctt tca gca ctt gat act gat gaa cct         3805
Arg Asp Ile Glu Leu Glu Leu Ser Ala Leu Asp Thr Asp Glu Pro
    1055            1060            1065

gat gga caa agt gaa cca att gaa gag atc ttg gac ata cag ctt         3850
Asp Gly Gln Ser Glu Pro Ile Glu Glu Ile Leu Asp Ile Gln Leu
    1070            1075            1080

ggt atc agt tct caa aat gat cag ttg cta aat gga atg gca gtg         3895
Gly Ile Ser Ser Gln Asn Asp Gln Leu Leu Asn Gly Met Ala Val
    1085            1090            1095

gaa aat ggg cat cca gta cag cag cac caa aag gag cca cca aag         3940
Glu Asn Gly His Pro Val Gln Gln His Gln Lys Glu Pro Pro Lys
    1100            1105            1110

cag aag aaa cag agt tta ggt gaa gac cat gtg att ctg gag gag         3985
Gln Lys Lys Gln Ser Leu Gly Glu Asp His Val Ile Leu Glu Glu
    1115            1120            1125

caa aaa aca att ctg ccg gta act tct tgc ttt agc cag cca ctc         4030
Gln Lys Thr Ile Leu Pro Val Thr Ser Cys Phe Ser Gln Pro Leu
    1130            1135            1140

cca gtg tct att agc aat gca agt tgc ctc ccc atc acc aca tct         4075
Pro Val Ser Ile Ser Asn Ala Ser Cys Leu Pro Ile Thr Thr Ser
    1145            1150            1155

gtc agt gct ggc aac ctc att ctg aaa act cat gtt atg tct gaa         4120
Val Ser Ala Gly Asn Leu Ile Leu Lys Thr His Val Met Ser Glu
    1160            1165            1170

gat aaa aac gac ttt tta aaa cct gtt gca aat ggg aag atg gtt         4165
Asp Lys Asn Asp Phe Leu Lys Pro Val Ala Asn Gly Lys Met Val
    1175            1180            1185

aac agc tga aaggaggttc atctttcaaa tttgtgacca caccatggaa           4214
Asn Ser
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Page 16

1190

gcatttacac tagctttta tatatataat atatattata taatgtatat tttttttaaa   4274

aaaaagatat tactgggggc atccatttcc tgtggactct ttgatacttc aagccctctt   4334

gcattagcat tatg   4348

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Cys Tyr Asn Glu Phe Asp Glu Asn Val His Lys Pro Ile Ser Leu Gly
            20   25   30

Cys Ser His Thr Val Cys Lys Thr Cys Leu Asn Lys Leu His Arg Lys
        35   40   45

Ala Cys Pro Phe Asp Gln Thr Ala Ile Asn Thr Asp Ile Asp Val Leu
    50   55   60

Pro Val Asn Phe Ala Leu Leu Gln Leu Val Gly Ala Gln Val Pro Asp
65   70   75   80

His Gln Ser Ile Lys Leu Ser Asn Leu Gly Glu Asn Lys His Tyr Glu
                85   90   95

Val Ala Lys Lys Cys Val Glu Asp Leu Ala Leu Tyr Leu Lys Pro Leu
                100   105   110

Ser Gly Gly Lys Gly Val Ala Ser Leu Asn Gln Ser Ala Leu Ser Arg
            115   120   125

Pro Met Gln Arg Lys Leu Val Thr Leu Val Asn Cys Gln Leu Val Glu
    130   135   140

Glu Glu Gly Arg Val Arg Ala Met Arg Ala Ala Arg Ser Leu Gly Glu
145   150   155   160

Arg Thr Val Thr Glu Leu Ile Leu Gln His Gln Asn Pro Gln Gln Leu
                165   170   175

Ser Ala Asn Leu Trp Ala Ala Val Arg Ala Arg Gly Cys Gln Phe Leu
            180   185   190

Page 17

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Gly Pro Ala Met Gln Glu Glu Ala Leu Lys Leu Val Leu Leu Ala Leu
        195             200             205

Glu Asp Gly Ser Ala Leu Ser Arg Lys Val Leu Val Leu Phe Val Val
        210             215             220

Gln Arg Leu Glu Pro Arg Phe Pro Gln Ala Ser Lys Thr Ser Ile Gly
225                 230             235             240

His Val Val Gln Leu Leu Tyr Arg Ala Ser Cys Phe Lys Val Thr Lys
            245             250             255

Arg Asp Glu Asp Ser Ser Leu Met Gln Leu Lys Glu Glu Phe Arg Ser
        260             265             270

Tyr Glu Ala Leu Arg Arg Glu His Asp Ala Gln Ile Val His Ile Ala
        275             280             285

Met Glu Ala Gly Leu Arg Ile Ser Pro Glu Gln Trp Ser Ser Leu Leu
    290             295             300

Tyr Gly Asp Leu Ala His Lys Ser His Met Gln Ser Ile Ile Asp Lys
305             310             315             320

Leu Gln Ser Pro Glu Ser Phe Ala Lys Ser Val Gln Glu Leu Thr Ile
            325             330             335

Val Leu Gln Arg Thr Gly Asp Pro Ala Asn Leu Asn Arg Leu Arg Pro
            340             345             350

His Leu Glu Leu Leu Ala Asn Ile Asp Pro Asn Pro Asp Ala Val Ser
        355             360             365

Pro Thr Trp Glu Gln Leu Glu Asn Ala Met Val Ala Val Lys Thr Val
    370             375             380

Val His Gly Leu Val Asp Phe Ile Gln Asn Tyr Ser Arg Lys Gly His
385             390             395             400

Glu Thr Pro Gln Pro Gln Pro Asn Ser Lys Tyr Lys Thr Ser Met Cys
            405             410             415

Arg Asp Leu Arg Gln Gln Gly Gly Cys Pro Arg Gly Thr Asn Cys Thr
            420             425             430

Phe Ala His Ser Gln Glu Glu Leu Glu Lys Tyr Arg Leu Arg Asn Lys
        435             440             445
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Lys Ile Asn Ala Thr Val Arg Thr Phe Pro Leu Leu Asn Lys Val Gly
    450   455   460

Val Asn Asn Thr Val Thr Thr Thr Ala Gly Asn Val Ile Ser Val Ile
465   470   475   480

Gly Ser Thr Glu Thr Thr Gly Lys Ile Val Pro Ser Thr Asn Gly Ile
          485   490   495

Ser Asn Ala Glu Asn Ser Val Ser Gln Leu Ile Ser Arg Ser Thr Asp
        500   505   510

Ser Thr Leu Arg Ala Leu Glu Thr Val Lys Lys Val Gly Lys Val Gly
        515   520   525

Ala Asn Gly Gln Asn Ala Ala Gly Pro Ser Ala Asp Ser Val Thr Glu
        530   535   540

Asn Lys Ile Gly Ser Pro Pro Lys Thr Pro Val Ser Asn Val Ala Ala
545   550   555   560

Thr Ser Ala Gly Pro Ser Asn Val Gly Thr Glu Leu Asn Ser Val Pro
        565   570   575

Gln Lys Ser Ser Pro Phe Leu Thr Arg Val Pro Val Tyr Pro Pro His
        580   585   590

Ser Glu Asn Ile Gln Tyr Phe Gln Asp Pro Arg Thr Gln Ile Pro Phe
        595   600   605

Glu Val Pro Gln Tyr Pro Gln Thr Gly Tyr Tyr Pro Pro Pro Pro Thr
    610   615   620

Val Pro Ala Gly Val Ala Pro Cys Val Pro Arg Phe Val Arg Ser Asn
625   630   635   640

Asn Val Pro Glu Ser Ser Leu Pro Pro Ala Ser Met Pro Tyr Ala Asp
        645   650   655

His Tyr Ser Thr Phe Ser Pro Arg Asp Arg Met Asn Ser Ser Pro Tyr
        660   665   670

Gln Pro Pro Pro Gln Pro Tyr Gly Pro Val Pro Pro Val Pro Ser
        675   680   685

Gly Met Tyr Ala Pro Val Tyr Asp Ser Arg Arg Ile Trp Arg Pro Pro

690   695   700

Met Tyr Gln Arg Asp Asp Ile Ile Arg Ser Asn Ser Leu Pro Pro Met
705   710   715   720

Asp Val Met His Ser Ser Val Tyr Gln Thr Ser Leu Arg Glu Arg Tyr
                725   730   735

Asn Ser Leu Asp Gly Tyr Tyr Ser Val Ala Cys Gln Pro Pro Ser Glu
            740   745   750

Pro Arg Thr Thr Val Pro Leu Pro Arg Glu Pro Cys Gly His Leu Lys
        755   760   765

Thr Ser Cys Glu Glu Gln Ile Arg Arg Lys Pro Asp Gln Trp Ala Gln
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Tyr His Thr Gln Lys Ala Pro Leu Val Ser Ser Thr Leu Pro Val Ala
785   790   795   800

Thr Gln Ser Pro Thr Pro Pro Ser Pro Leu Phe Ser Val Asp Phe Arg
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Ala Asp Phe Ser Glu Ser Val Ser Gly Thr Lys Phe Glu Glu Asp His
            820   825   830

Leu Ser His Tyr Ser Pro Trp Ser Cys Gly Thr Ile Gly Ser Cys Ile
        835   840   845

Asn Ala Ile Asp Ser Glu Pro Lys Asp Val Ile Ala Asn Ser Asn Ala
    850   855   860

Val Leu Met Asp Leu Asp Ser Gly Asp Val Lys Arg Arg Val His Leu
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Phe Glu Thr Gln Arg Arg Thr Lys Glu Glu Asp Pro Ile Ile Pro Phe
            885   890   895

Ser Asp Gly Pro Ile Ile Ser Lys Trp Gly Ala Ile Ser Arg Ser Ser
            900   905   910

Arg Thr Gly Tyr His Thr Thr Asp Pro Val Gln Ala Thr Ala Ser Gln
        915   920   925

Gly Ser Ala Thr Lys Pro Ile Ser Val Ser Asp Tyr Val Pro Tyr Val
    930   935   940

Page 20

Asn Ala Val Asp Ser Arg Trp Ser Ser Tyr Gly Asn Glu Ala Thr Ser
945   950   955   960

Ser Ala His Tyr Val Glu Arg Asp Arg Phe Ile Val Thr Asp Leu Ser
            965   970   975

Gly His Arg Lys His Ser Ser Thr Gly Asp Leu Leu Ser Leu Glu Leu
            980   985   990

Gln Gln Ala Lys Ser Asn Ser Leu Leu Leu Gln Arg Glu Ala Asn Ala
        995   1000   1005

Leu Ala Met Gln Gln Lys Trp Asn Ser Leu Asp Glu Gly Arg His
    1010   1015   1020

Leu Thr Leu Asn Leu Leu Ser Lys Glu Ile Glu Leu Arg Asn Glu
    1025   1030   1035

Leu Gln Ser Asp Tyr Thr Glu Asp Ala Thr Asp Thr Lys Pro Asp
    1040   1045   1050

Arg Asp Ile Glu Leu Glu Leu Ser Ala Leu Asp Thr Asp Glu Pro
    1055   1060   1065

Asp Gly Gln Ser Glu Pro Ile Glu Glu Ile Leu Asp Ile Gln Leu
    1070   1075   1080

Gly Ile Ser Ser Gln Asn Asp Gln Leu Leu Asn Gly Met Ala Val
    1085   1090   1095

Glu Asn Gly His Pro Val Gln Gln His Gln Lys Glu Pro Pro Lys
    1100   1105   1110

Gln Lys Lys Gln Ser Leu Gly Glu Asp His Val Ile Leu Glu Glu
    1115   1120   1125

Gln Lys Thr Ile Leu Pro Val Thr Ser Cys Phe Ser Gln Pro Leu
    1130   1135   1140

Pro Val Ser Ile Ser Asn Ala Ser Cys Leu Pro Ile Thr Thr Ser
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Val Ser Ala Gly Asn Leu Ile Leu Lys Thr His Val Met Ser Glu
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Asp Lys Asn Asp Phe Leu Lys Pro Val Ala Asn Gly Lys Met Val
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Page 21

Asn Ser
    1190

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                20   25   30

Val Cys Glu Asp Val Phe Ser Leu Gln Gly Asp Lys Val Pro Arg Leu
            35   40   45

Leu Leu Cys Gly His Thr Val Cys His Asp Cys Leu Thr Arg Leu Pro
    50   55   60

Leu His Gly Arg Ala Ile Arg Cys Pro Phe Asp Arg Gln Val Thr Asp
65   70   75   80

Leu Gly Asp Ser Gly Val Trp Gly Leu Lys Lys Asn Phe Ala Leu Leu
                85   90   95

Glu Leu Leu Glu Arg Leu Gln Asn Gly Pro Ile Gly Gln Tyr Gly Ala
                100   105   110

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Ala Glu Glu Ser Ile Gly Ile Ser Gly Glu Ser Ile Ile Arg Cys Asp
        115             120             125

Glu Asp Glu Ala His Leu Ala Ser Val Tyr Cys Thr Val Cys Ala Thr
    130             135             140

His Leu Cys Ser Glu Cys Ser Gln Val Thr His Ser Thr Lys Thr Leu
145             150             155             160

Ala Lys His Arg Arg Val Pro Leu Ala Asp Lys Pro His Glu Lys Thr
            165             170             175

Met Cys Ser Gln His Gln Val His Ala Ile Glu Phe Val Cys Leu Glu
        180             185             190

Glu Gly Cys Gln Thr Ser Pro Leu Met Cys Cys Val Cys Lys Glu Tyr
        195             200             205

Gly Lys His Gln Gly His Lys His Ser Val Leu Glu Pro Glu Ala Asn
    210             215             220

Gln Ile Arg Ala Ser Ile Leu Asp Met Ala His Cys Ile Arg Thr Phe
225             230             235             240

Thr Glu Glu Ile Ser Asp Tyr Ser Arg Lys Leu Val Gly Ile Val Gln
            245             250             255

His Ile Glu Gly Gly Glu Gln Ile Val Glu Asp Gly Ile Gly Met Ala
        260             265             270

His Thr Glu His Val Pro Gly Thr Ala Glu Asn Ala Arg Ser Cys Ile
    275             280             285

Arg Ala Tyr Phe Tyr Asp Leu His Glu Thr Leu Cys Arg Gln Glu Glu
    290             295             300

Met Ala Leu Ser Val Val Asp Ala His Val Arg Glu Lys Leu Ile Trp
305             310             315             320

Leu Arg Gln Gln Gln Glu Asp Met Thr Ile Leu Leu Ser Glu Val Ser
            325             330             335

Ala Ala Cys Leu His Cys Glu Lys Thr Leu Gln Gln Asp Asp Cys Arg
        340             345             350

Val Val Leu Ala Lys Gln Glu Ile Thr Arg Leu Leu Thr Glu Leu Gln
    355             360             365
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Ile Cys Pro Ile Cys Ser Gly Val Leu Glu Glu Pro Val Gln Ala Pro
            20   25   30

His Cys Glu His Ala Phe Cys Asn Ala Cys Ile Thr Gln Trp Phe Ser
         35   40   45

Gln Gln Gln Thr Cys Pro Val Asp Arg Ser Val Val Thr Val Ala His
      50   55   60

Leu Arg Pro Val Pro Arg Ile Met Arg Asn Met Leu Ser Lys Leu Gln
65   70   75   80

Ile Ala Cys Asp Asn Ala Val Phe Gly Cys Ser Ala Val Val Arg Leu
            85   90   95

Asp Asn Leu Met Ser His Leu Ser Asp Cys Glu His Asn Pro Lys Arg
            100   105   110

Pro Val Thr Cys Glu Gln Gly Cys Gly Leu Glu Met Pro Lys Asp Glu
         115   120   125

Leu Pro Asn His Asn Cys Ile Lys His Leu Arg Ser Val Val Gln Gln
   130   135   140

Gln Gln Thr Arg Ile Ala Glu Leu Glu Lys Thr Ser Ala Glu His Lys
145   150   155   160

His Gln Leu Ala Glu Gln Lys Arg Asp Ile Gln Leu Leu Lys Ala Tyr
            165   170   175

Met Arg Ala Ile Arg Ser Val Asn Pro Asn Leu Gln Asn Leu Glu Glu
            180   185   190

Thr Ile Glu Tyr Asn Glu Ile Leu Glu Trp Val Asn Ser Leu Gln Pro
         195   200   205

Ala Arg Val Thr Arg Trp Gly Gly Met Ile Ser Thr Pro Asp Ala Val
   210   215   220

Leu Gln Ala Val Ile Lys Arg Ser Leu Val Glu Ser Gly Cys Pro Ala
225   230   235   240

Ser Ile Val Asn Glu Leu Ile Glu Asn Ala His Glu Arg Ser Trp Pro
            245   250   255

Gln Gly Leu Ala Thr Leu Glu Thr Arg Gln Met Asn Arg Arg Tyr Tyr

Glu Asn Tyr Val Ala Lys Arg Ile Pro Gly Lys Gln Ala Val Val Val
        275   280   285

Met Ala Cys Glu Asn Gln His Met Gly Asp Asp Met Val Gln Glu Pro
    290   295   300

Gly Leu Val Met Ile Phe Ala His Gly Val Glu Glu Ile
305   310   315

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<213> Caenorhabditis elegans

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Met Arg Met Met Glu Ala Glu Ile Lys Asp Gln Arg Asn Asn Leu Gln
1   5   10   15

Ala Leu Lys Asn Ser Gln Arg Leu Ser Val Arg Gly Ser Ile Gln Ser
            20   25   30

Asn Met Ser Ser Arg Thr Asp Gly Ile Leu Gln Arg Arg Leu Asp Glu
        35   40   45

Thr Glu Arg Lys Leu Ala Lys Thr Ser Ala Glu Leu Lys Ala Lys Asp
    50   55   60

Glu Lys Leu Lys Lys Glu Thr Ala Ser Leu Glu Ala Ser Arg Glu Ala
65   70   75   80

His Arg Leu Leu Gln Glu Glu Ser Asn Lys Ser Lys Val Ser Val Met
            85   90   95

Arg Leu Thr Phe Lys Leu Asn Arg Ile Thr His Glu Ser Val Lys Glu
            100   105   110

Gln Ala Val Leu Lys Lys Lys Leu Leu Asp Cys Glu Thr Arg Leu Ala
        115   120   125

Thr Tyr Ser Glu Cys Leu Val Cys Tyr Gln Lys Phe Asp Glu Asn Thr
    130   135   140

Arg Ile Pro Arg Val Met Asp Cys Gly His Thr Leu Cys Asp Phe Cys
145   150   155   160

Ile Asn Gln Ile Val Lys Met Ala Gly Cys Tyr Ser Ala Thr Cys Pro
                            Page 26

Phe Asp Arg Val Arg Ile Phe Gly Phe Gly Lys Ser Arg Arg Leu Glu
          180   185   190

Asp Arg Pro Cys Asn Arg Phe Ile Met Lys
          195   200

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<213> Caenorhabditis elegans

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Met Ala Pro Ile Arg Arg Ser Ser Arg Leu Ala Glu Arg Tyr Asp Ala
1   5   10   15

Ile Glu Ser Lys Lys Arg Ser Leu Lys Arg Leu Glu Glu Gln Ile Lys
          20   25   30

Ala Glu Glu Glu Gln Phe Ser Asp Lys Met Lys Gln Leu Glu Asp Glu
          35   40   45

Ile Lys Ile Lys Glu Gln Val Ile Thr Met Phe Lys Arg Lys Thr Val
          50   55   60

Arg Arg Glu Trp Met Arg Asn Ser Arg Gln Ala Thr Thr Asn Ile Asn
65   70   75   80

Ile Ala Gln Ile Glu Ser Leu Lys Leu Gln Leu Glu Glu Gly Glu Lys
                  85   90   95

Asp Ile Ala Glu Ala Glu Lys Gln Ala Glu Pro Thr Thr Pro Gln Gln
          100   105   110

Glu Ala Glu Leu Ser Glu Thr Phe Lys Gln Met Val Arg Asp Arg Met
          115   120   125

Lys Val Lys Asp Val Asp Glu Lys Leu Leu Gln Gln Tyr Met Lys Lys
          130   135   140

Glu Asn Val Glu Phe Glu Trp Arg Ser Cys Phe Ile Cys Thr Met Glu
145   150   155   160

Tyr Ser Arg Thr Asp Lys Asn Leu His Pro Ile Ile Leu Asn Cys Gly
                  165   170   175

His Asn Leu Cys Arg Ser Cys Ile Asn Lys Leu Thr Gly Asn Gly Ile

Val Lys Cys Pro Phe Asp Arg Leu Asp Thr Arg Val Arg Val Thr Gly
        195   200   205

Leu Pro Arg Asn Leu Ala Leu Ile Asn Leu
    210   215

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<213> Caenorhabditis elegans

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Met Ala Pro Thr Gly Gln Gly Gly Gln Trp Gln Glu Val Leu Cys Cys
1   5   10   15

Ser Ile Cys Asn Arg His Phe Asn Glu Thr Phe Leu Pro Val Ser Leu
            20   25   30

Ile Cys Gly His Val Ile Cys Arg Lys Cys Ala Glu Lys Pro Glu Asn
        35   40   45

Gln Thr Lys Pro Cys Pro His Asp Asp Trp Lys Thr Thr His Ser Pro
    50   55   60

Ser Glu Tyr Pro Asn Asn Val Ala Leu Leu Ser Val Ile Phe Pro Arg
65   70   75   80

Lys Gln Cys Met Thr Leu Ser Gly Ala Val Ser Glu Ala Glu Lys Arg
                85   90   95

Val Asp Gln Leu Ser Ile Gln Ile Ala Lys Phe Phe Arg Glu Ala Asp
                100   105   110

Ser Glu Arg Gly Gly Thr Val Ser Ser Arg Glu Ile Ser Arg Thr Leu
        115   120   125

Gln Arg Lys Val Leu Ala Leu Leu Cys Tyr Gln Trp Arg Glu Val Asp
    130   135   140

Gly Arg Leu Lys Thr Leu Lys Met Cys Arg Gly Ile Ser Glu Arg Val
145   150   155   160

Met Ile Glu Ile Ile Leu Ser Ile Gln Ser Asn Thr His Val Ser Ser
                165   170   175

Gln Leu Trp Ser Ala Val Arg Ala Arg Gly Cys Gln Phe Leu Gly Pro
                            Page 28

                    180   185   190

Ala Met Gln Asp Asp Val Leu Arg Leu Ile Leu Met Thr Leu Glu Thr
        195   200   205

Gly Glu Cys Ile Ala Arg Lys Asn Leu Val Met Tyr Val Val Gln Thr
        210   215   220

Leu Ala Ser Asp Tyr Pro Gln Val Ser Lys Thr Cys Val Gly His Val
225   230   235   240

Val Gln Leu Leu Tyr Arg Ala Ser Cys Phe Asn Val Leu Lys Arg Asp
            245   250   255

Gly Glu Ser Ser Leu Met Gln Leu Lys Glu Glu Phe Arg Thr Tyr Glu
        260   265   270

Ser Leu Arg Arg Glu His Asp Ser Gln Ile Val Gln Ile Ala Phe Glu
        275   280   285

Ser Gly Leu Arg Ile Gly Pro Asp Gln Trp Ser Ala Leu Leu Tyr Ala
        290   295   300

Asp Gln Ser His Arg Ser His Met Gln Ser Ile Ile Asp Lys Leu Gln
305   310   315   320

Ser Lys Asn Ser Tyr Gln Gln Gly Val Glu Glu Leu Arg Ala Leu Ala
            325   330   335

Gly Ser Gln Thr Ser Met Leu Val Pro Ala Tyr Arg Tyr Phe Leu Thr
        340   345   350

Gln Val Ile Pro Cys Leu Glu Phe Phe Ala Gly Ile Glu His Glu Asp
        355   360   365

Thr Ser Met Arg Met Ile Gly Asp Ala Leu His Gln Ile Arg Ile Leu
    370   375   380

Leu Lys Leu His Cys Ser Gln Asp Asp Leu Arg Lys Met Pro Lys Glu
385   390   395   400

Glu Arg Arg Gly Val Ile Leu Gln Ala Glu Val Pro Gly Gly Met Gly
            405   410   415

Gly Gly Pro Gly Gly Ser Gly Gly Ala Glu Ala Gly Arg Ile Gly Gly
        420   425   430

Leu His Pro Leu Tyr Ser Gln Ile Asp Glu Thr Gly Arg Ser Ile Ser
        435   440   445

Arg Thr Asn Pro Lys Asp Asn Ser His Asn Ser Pro Gln Thr Pro Pro
        450   455   460

Lys Gln Pro Arg Gln Lys Arg Tyr Gln Met Gly Ile Pro Pro Asn Arg
465   470   475   480

Met Gly Tyr Ser Ser Asp Ala Pro Pro Phe Ile Pro Ser His Gln Gln
                485   490   495

Gln Pro Pro Pro Gln Phe Phe Asn Ser Gln His Leu Pro Gln Arg Phe
            500   505   510

Arg Gly Gly Arg Gln Arg Gly Ala Pro Pro Pro Pro Pro Pro Gln Pro
        515   520   525

Met Pro Met Leu Ile Gly Tyr Asp Met Pro Gly Ala Pro Met Met Gln
    530   535   540

Ala Thr Glu Val Leu Thr Ala Asp Gly Gln Met Val Asn Gly Thr Pro
545   550   555   560

Gln Arg Val Val Ile Met Gln Ser Pro Thr His Leu Pro Gly Gly Pro
                565   570   575

Val Val Met Ile Pro Gln Gln Gln Met Val Pro Pro Pro Gln Ser Met
            580   585   590

Thr Pro Val Gly Gly Pro Met Gly Pro Met Gly Pro Met Thr Pro Ser
        595   600   605

Ile Pro Val Gln Val Pro Pro Asn Thr Met Trp Thr Ala Thr Ser Pro
    610   615   620

Thr Gly Ser Val Ile Tyr Pro Ala Ala Ser Pro Pro Gly Gln Pro Pro
625   630   635   640

His Thr Ile Trp Ile Gln Ser Ile Gly Val Phe Lys Arg Lys Ser Asn
                645   650   655

Phe Leu Lys Ile Val Arg Lys Ile Ser Phe Phe Leu Asn Phe Tyr Asp
            660   665   670

Phe Phe Leu Ile Leu Arg Lys Leu Lys Lys Glu Lys Lys Gly Ala Asp
        675   680   685

Page 30

Ile Glu Phe Phe Glu Lys Ile Lys Ser Thr Asp Phe Lys Lys Tyr Pro
    690   695   700

Ser Ser Phe Ser Arg Thr Asp Gly Asn Met Phe Pro Met Phe Asp Arg
705   710   715   720

Gly Ser Gly Gly Met Val Trp Gly Pro Gly Thr Met Leu Arg Glu Ser
                725   730   735

Gly Ala Asp Ala Glu Gln Leu Leu Ala Lys Arg Tyr Glu Ile Leu Lys
            740   745   750

Arg Leu Gln Pro Ser Glu Asp Asp Asp Pro Glu Asp Gly Gly Ile
        755   760   765

Gly His Val Ser Tyr Thr Val Ala Ser Ser Val Leu Asp Asp Arg Met
    770   775   780

Asp His His Pro Leu Thr Met Ile Pro Val Pro Thr Ile Asp Leu Pro
785   790   795   800

Ala Ile Pro Ile Ser Phe Ala Asn Met Pro Thr Glu Glu Thr Met Thr
            805   810   815

Met Ile Gly Glu Met Val Gln Asn Arg Pro Arg Ala Pro Ser Leu Thr
        820   825   830

Ala Pro Ser Ser Asn Gln Pro Met Asn Val Asn Ala Ser Ala Ser Ala
        835   840   845

Thr Val Gln Ala Glu Cys Glu Asn Arg Lys Ile Leu Asp Phe Pro Leu
    850   855   860

Lys Tyr Arg Lys Met Thr Leu Met Phe Glu Lys Val Ser Thr Cys Phe
865   870   875   880

His Val Thr Leu Leu Lys Asp Tyr Met Val Phe Tyr Val Leu Asn Thr
            885   890   895

Leu Asn Phe Ala Ser Arg Trp Pro Arg Arg Arg Ala Ala Thr Ile
        900   905   910

Pro Gln Pro Val Ile Pro Met Val Gln Val Pro Val Gln Val Pro Ile
    915   920   925

Val Pro Ala Glu Asn Phe Asn Pro Asn Val Pro Pro Pro Pro Pro Pro
    930   935   940

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Pro Gln Gly Gln Pro Met Leu Val Asp Ser Ala Ile Gly Leu Leu Thr
945             950             955             960

Pro Ile Arg Pro Ile Leu Val Ala His Pro Gln Asn Val Val Ser Asn
            965             970             975

Ser Leu Asp Lys Ile Val Asp Val Lys Glu Arg Ile Ser Glu Ala Gln
            980             985             990

Gly Asn Ala Ser Glu Ala Glu Asn Ala His Leu Arg Met Glu Leu Arg
        995             1000            1005

Met Ala Glu Ser Gln Met Ala His Leu Asp Pro Tyr Thr Lys Asn
    1010            1015            1020

Asn Cys Leu Leu Arg Ala Leu Gln Gln Val Asp Met Glu Leu Gln
    1025            1030            1035

Gln Leu His Leu Asn Pro Thr Val Glu Gly
    1040            1045
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cgcccgtgcc ggccgctcgc cgcc atg cct ggc ttc gac tac aag ttc ctg     112
                           Met Pro Gly Phe Asp Tyr Lys Phe Leu
                           1               5

gag aag ccc aag cga cgg ctg ctg tgc cca ctg tgc ggg aag ccc atg     160
Glu Lys Pro Lys Arg Arg Leu Leu Cys Pro Leu Cys Gly Lys Pro Met
10              15              20              25

cgc gag cct gtg cag gtt tcc acc tgc ggc cac cgt ttc tgc gat acc     208
Arg Glu Pro Val Gln Val Ser Thr Cys Gly His Arg Phe Cys Asp Thr
                30              35              40

tgc ctg cag gag ttc ctc agt gaa gga gtc ttc aag tgc cct gag gac     256
Cys Leu Gln Glu Phe Leu Ser Glu Gly Val Phe Lys Cys Pro Glu Asp
            45              50              55

cag ctt cct ctg gac tat gcc aag atc tac cca gac ccg gag ctg gaa     304
Gln Leu Pro Leu Asp Tyr Ala Lys Ile Tyr Pro Asp Pro Glu Leu Glu
            60              65              70
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gta caa gta ttg ggc ctg cct atc cgc tgc atc cac agt gag gag ggc      352
Val Gln Val Leu Gly Leu Pro Ile Arg Cys Ile His Ser Glu Glu Gly
 75                  80                  85

tgc cgc tgg agt ggg cca cta cgt cat cta cag ggc cac ctg aat acc      400
Cys Arg Trp Ser Gly Pro Leu Arg His Leu Gln Gly His Leu Asn Thr
 90                  95                 100                 105

tgc agc ttc aat gtc att ccc tgc cct aat cgc tgc ccc atg aag ctg      448
Cys Ser Phe Asn Val Ile Pro Cys Pro Asn Arg Cys Pro Met Lys Leu
                    110                 115                 120

agc cgc cgt gat cta cct gca cac ttg cag cat gac tgc ccc aag cgg      496
Ser Arg Arg Asp Leu Pro Ala His Leu Gln His Asp Cys Pro Lys Arg
                125                 130                 135

cgc ctc aag tgc gag ttt tgt ggc tgt gac ttc agt ggg gag gcc tat      544
Arg Leu Lys Cys Glu Phe Cys Gly Cys Asp Phe Ser Gly Glu Ala Tyr
                140                 145                 150

gag agc cat gag ggt atg tgc ccc cag gag agt gtc tac tgt gag aat      592
Glu Ser His Glu Gly Met Cys Pro Gln Glu Ser Val Tyr Cys Glu Asn
                155                 160                 165

aag tgt ggt gcc cgc atg atg cgg ggg ctg ctg gcc cag cat gcc acc      640
Lys Cys Gly Ala Arg Met Met Arg Gly Leu Leu Ala Gln His Ala Thr
170                 175                 180                 185

tct gag tgc ccc aag cgc act cag ccc tgc acc tac tgc act aag gag      688
Ser Glu Cys Pro Lys Arg Thr Gln Pro Cys Thr Tyr Cys Thr Lys Glu
                190                 195                 200

ttc gtc ttt gac acc atc cag agc cac cag tac cag tgc cca agg ctg      736
Phe Val Phe Asp Thr Ile Gln Ser His Gln Tyr Gln Cys Pro Arg Leu
                205                 210                 215

cct gtt gcc tgc ccc aac caa tgt ggt gtg ggc act gtg gct cgg gag      784
Pro Val Ala Cys Pro Asn Gln Cys Gly Val Gly Thr Val Ala Arg Glu
                220                 225                 230

gac ctg cca ggc cat ctg aag gac agc tgt aac acc gcc ctg gtg ctc      832
Asp Leu Pro Gly His Leu Lys Asp Ser Cys Asn Thr Ala Leu Val Leu
                235                 240                 245

tgc cca ttc aaa gac tcc ggc tgc aag cac agg tgc cct aag ctg gca      880
Cys Pro Phe Lys Asp Ser Gly Cys Lys His Arg Cys Pro Lys Leu Ala
250                 255                 260                 265

atg gca cgg cat gtg gag gag agt gtg aag cca cat ctg gcc atg atg      928
Met Ala Arg His Val Glu Glu Ser Val Lys Pro His Leu Ala Met Met
                270                 275                 280

tgt gcc ctg gtg agc cgg caa cgg cag gag ctg cag gag ctt cgg cga      976
Cys Ala Leu Val Ser Arg Gln Arg Gln Glu Leu Gln Glu Leu Arg Arg
                285                 290                 295

gag ctg gag gag cta tca gtg ggc agt gat ggc gtg ctc atc tgg aag     1024
Glu Leu Glu Glu Leu Ser Val Gly Ser Asp Gly Val Leu Ile Trp Lys
                300                 305                 310

att ggc agc tat gga cgg cgg cta cag gag gcc aag gcc aag ccc aac     1072
Ile Gly Ser Tyr Gly Arg Arg Leu Gln Glu Ala Lys Ala Lys Pro Asn
315                 320                 325
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ctt gag tgc ttc agc cca gcc ttc tac aca cat aag tat ggt tac aag     1120
Leu Glu Cys Phe Ser Pro Ala Phe Tyr Thr His Lys Tyr Gly Tyr Lys
330             335             340             345

ctg cag gtg tct gca ttc ctc aat ggc aat ggc agt ggt gag ggc aca     1168
Leu Gln Val Ser Ala Phe Leu Asn Gly Asn Gly Ser Gly Glu Gly Thr
            350             355             360

cac ctc tca ctg tac att cgt gtg ctg cct ggt gcc ttt gac aat ctc     1216
His Leu Ser Leu Tyr Ile Arg Val Leu Pro Gly Ala Phe Asp Asn Leu
            365             370             375

ctt gag tgg ccc ttt gcc cgc cgt gtc acc ttc tcc ctg ctg gat cag     1264
Leu Glu Trp Pro Phe Ala Arg Arg Val Thr Phe Ser Leu Leu Asp Gln
            380             385             390

agc gac cct ggg ctg gct aaa cca cag cac gtc act gag acc ttc cac     1312
Ser Asp Pro Gly Leu Ala Lys Pro Gln His Val Thr Glu Thr Phe His
            395             400             405

ccc gac cca aac tgg aag aat ttc cag aag cca ggc acg tgg cgg ggc     1360
Pro Asp Pro Asn Trp Lys Asn Phe Gln Lys Pro Gly Thr Trp Arg Gly
410             415             420             425

tcc ctg gat gag agt tct ctg ggc ttt ggt tat ccc aag ttc atc tcc     1408
Ser Leu Asp Glu Ser Ser Leu Gly Phe Gly Tyr Pro Lys Phe Ile Ser
            430             435             440

cac cag gac att cga aag cga aac tat gtg cgg gat gat gca gtc ttc     1456
His Gln Asp Ile Arg Lys Arg Asn Tyr Val Arg Asp Asp Ala Val Phe
            445             450             455

atc cgt gct gct gtt gaa ctg ccc cgg aag atc ctc agc tga            1498
Ile Arg Ala Ala Val Glu Leu Pro Arg Lys Ile Leu Ser
460             465             470

gtgcaggtgg ggttcgaggg gaaaggacga tggggcatga cctcagtcag gcactggctg     1558

aacttggaga gggggccgga cccccgtcag ctgcttctgc tgcctaggtt ctgttacccc     1618

atcctccctc ccccagccac caccctcagg tgcctccaat tggtgcttca gccctggccc     1678

ctgtggggaa caggtcttgg ggtcatgaag ggctggaaac aagtgacccc agggcctgtc     1738

tcccttcttg ggtagggcag acatgccttg gtgccggtca cactctacac ggactgaggt     1798

gcctgctcag gtgctatgtc ccaagagcca taaggggtg ggaattgggg agggagaaag     1858

ggtagttcaa agagtctgtc ttgagatctg attttttccc cctttaccta gctgtgcccc     1918

ctctggttat ttatttcctt agtgccagga gggcacagca ggggagccct gattttaat      1978

aaatccggaa ttgtatttat t                                              1999
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<213>  Homo sapiens

<400>  13
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Met Pro Gly Phe Asp Tyr Lys Phe Leu Glu Lys Pro Lys Arg Arg Leu
1               5               10              15
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```
Leu Cys Pro Leu Cys Gly Lys Pro Met Arg Glu Pro Val Gln Val Ser
            20              25              30
```

```
Thr Cys Gly His Arg Phe Cys Asp Thr Cys Leu Gln Glu Phe Leu Ser
        35              40              45
```

```
Glu Gly Val Phe Lys Cys Pro Glu Asp Gln Leu Pro Leu Asp Tyr Ala
    50              55              60
```

```
Lys Ile Tyr Pro Asp Pro Glu Leu Glu Val Gln Val Leu Gly Leu Pro
65              70              75              80
```

```
Ile Arg Cys Ile His Ser Glu Glu Gly Cys Arg Trp Ser Gly Pro Leu
            85              90              95
```

```
Arg His Leu Gln Gly His Leu Asn Thr Cys Ser Phe Asn Val Ile Pro
            100             105             110
```

```
Cys Pro Asn Arg Cys Pro Met Lys Leu Ser Arg Arg Asp Leu Pro Ala
        115             120             125
```

```
His Leu Gln His Asp Cys Pro Lys Arg Arg Leu Lys Cys Glu Phe Cys
    130             135             140
```

```
Gly Cys Asp Phe Ser Gly Glu Ala Tyr Glu Ser His Glu Gly Met Cys
145             150             155             160
```

```
Pro Gln Glu Ser Val Tyr Cys Glu Asn Lys Cys Gly Ala Arg Met Met
            165             170             175
```

```
Arg Gly Leu Leu Ala Gln His Ala Thr Ser Glu Cys Pro Lys Arg Thr
            180             185             190
```

```
Gln Pro Cys Thr Tyr Cys Thr Lys Glu Phe Val Phe Asp Thr Ile Gln
        195             200             205
```

```
Ser His Gln Tyr Gln Cys Pro Arg Leu Pro Val Ala Cys Pro Asn Gln
    210             215             220
```

```
Cys Gly Val Gly Thr Val Ala Arg Glu Asp Leu Pro Gly His Leu Lys
225             230             235             240
```

```
Asp Ser Cys Asn Thr Ala Leu Val Leu Cys Pro Phe Lys Asp Ser Gly
            245             250             255
```

```
Cys Lys His Arg Cys Pro Lys Leu Ala Met Ala Arg His Val Glu Glu
            260             265             270


Ser Val Lys Pro His Leu Ala Met Met Cys Ala Leu Val Ser Arg Gln
            275             280             285


Arg Gln Glu Leu Gln Glu Leu Arg Arg Glu Leu Glu Glu Leu Ser Val
    290             295             300


Gly Ser Asp Gly Val Leu Ile Trp Lys Ile Gly Ser Tyr Gly Arg Arg
305             310             315             320


Leu Gln Glu Ala Lys Ala Lys Pro Asn Leu Glu Cys Phe Ser Pro Ala
            325             330             335


Phe Tyr Thr His Lys Tyr Gly Tyr Lys Leu Gln Val Ser Ala Phe Leu
            340             345             350


Asn Gly Asn Gly Ser Gly Glu Gly Thr His Leu Ser Leu Tyr Ile Arg
            355             360             365


Val Leu Pro Gly Ala Phe Asp Asn Leu Leu Glu Trp Pro Phe Ala Arg
    370             375             380


Arg Val Thr Phe Ser Leu Leu Asp Gln Ser Asp Pro Gly Leu Ala Lys
385             390             395             400


Pro Gln His Val Thr Glu Thr Phe His Pro Asp Pro Asn Trp Lys Asn
                405             410             415


Phe Gln Lys Pro Gly Thr Trp Arg Gly Ser Leu Asp Glu Ser Ser Leu
            420             425             430


Gly Phe Gly Tyr Pro Lys Phe Ile Ser His Gln Asp Ile Arg Lys Arg
            435             440             445


Asn Tyr Val Arg Asp Asp Ala Val Phe Ile Arg Ala Ala Val Glu Leu
    450             455             460


Pro Arg Lys Ile Leu Ser
465             470


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<213>   Caenorhabditis elegans
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          Met Ala Gln Thr Lys Pro Ile Ala Glu Gln Met Ala Ala Leu
          1               5                   10

aac aac tca gat gac acg tcg ttc gct gcc gat cga tcg aac agt ctt        99
Asn Asn Ser Asp Asp Thr Ser Phe Ala Ala Asp Arg Ser Asn Ser Leu
15                  20                  25                  30

ctg aat gcg acg tgc ccg gcg aga att caa aat tca gta gat caa cgg       147
Leu Asn Ala Thr Cys Pro Ala Arg Ile Gln Asn Ser Val Asp Gln Arg
                35                  40                  45

aaa atc aat cga tca ttc aat gat tcg ctg tcg tcc gga tat agt gga       195
Lys Ile Asn Arg Ser Phe Asn Asp Ser Leu Ser Ser Gly Tyr Ser Gly
            50                  55                  60

aaa tgg ctt cgt cca aag cgt gaa gcg ctc aag atc act cca ttg gct       243
Lys Trp Leu Arg Pro Lys Arg Glu Ala Leu Lys Ile Thr Pro Leu Ala
        65                  70                  75

cag att gac gag gcg ccg gca act aaa aga cat agc tcg gcg aag gat       291
Gln Ile Asp Glu Ala Pro Ala Thr Lys Arg His Ser Ser Ala Lys Asp
    80                  85                  90

aag cac aca gaa tac aaa acg cga ctt tgt gat gcg ttc cgc cgt gaa       339
Lys His Thr Glu Tyr Lys Thr Arg Leu Cys Asp Ala Phe Arg Arg Glu
95                  100                 105                 110

gga tac tgc ccg tac aac gac aat tgc aca tat gct cac gga caa gat       387
Gly Tyr Cys Pro Tyr Asn Asp Asn Cys Thr Tyr Ala His Gly Gln Asp
                115                 120                 125

gag ctg aga gtt ccg aga cgc cgc caa gag tat tat tcc cga gat cca       435
Glu Leu Arg Val Pro Arg Arg Arg Gln Glu Tyr Tyr Ser Arg Asp Pro
            130                 135                 140

cca cgt gag cgc cgt gat tct cgt tct aga cga gac gac gtg gat aca       483
Pro Arg Glu Arg Arg Asp Ser Arg Ser Arg Arg Asp Asp Val Asp Thr
        145                 150                 155

aca atc aat cga tcg agt tct tca gca tcg aag cat cat gat gag aat       531
Thr Ile Asn Arg Ser Ser Ser Ser Ala Ser Lys His His Asp Glu Asn
        160                 165                 170

cgg aga ccc agc aac aac cac gga agc tcg aat cgt cgt cag att tgt       579
Arg Arg Pro Ser Asn Asn His Gly Ser Ser Asn Arg Arg Gln Ile Cys
175                 180                 185                 190

cac aat ttc gag aga gga aac tgc aga tat ggt cca aga tgc cgc ttc       627
His Asn Phe Glu Arg Gly Asn Cys Arg Tyr Gly Pro Arg Cys Arg Phe
                195                 200                 205

att cac gtc gaa caa atg caa cat ttc aat gcg aat gcg acg gtt tac       675
Ile His Val Glu Gln Met Gln His Phe Asn Ala Asn Ala Thr Val Tyr
            210                 215                 220

gcg cca cct tct tcc gat tgt ccg ccg ccg att gcc tac tac cat cat       723
Ala Pro Pro Ser Ser Asp Cys Pro Pro Pro Ile Ala Tyr Tyr His His
```

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           225                    230                    235
cat cca caa cat cag caa caa ttc ctg cca ttt cca atg cca tat ttc    771
His Pro Gln His Gln Gln Gln Phe Leu Pro Phe Pro Met Pro Tyr Phe
    240                245                250

ttg gct cca ccg ccg caa gct caa caa gga gct cct ttt cca gtg caa    819
Leu Ala Pro Pro Pro Gln Ala Gln Gln Gly Ala Pro Phe Pro Val Gln
255                260                265                270

tat att cca cag caa cat gat ttg atg aat agc cag cca atg tat gca    867
Tyr Ile Pro Gln Gln His Asp Leu Met Asn Ser Gln Pro Met Tyr Ala
                275                280                285

cca atg gca ccg aca tac tac tat caa cca att aat tcg aat ggc atg    915
Pro Met Ala Pro Thr Tyr Tyr Tyr Gln Pro Ile Asn Ser Asn Gly Met
            290                295                300

ccc atg atg gat gtg act att gat ccg aat gcc acg ggc ggt gcg ttt    963
Pro Met Met Asp Val Thr Ile Asp Pro Asn Ala Thr Gly Gly Ala Phe
        305                310                315

gaa gtg ttc ccc gat gga ttc ttc tct cag cca cca cca act att att    1011
Glu Val Phe Pro Asp Gly Phe Phe Ser Gln Pro Pro Pro Thr Ile Ile
    320                325                330

tcc taa ttttgccgta ttttccatat tttgttttgt atatttatcc actcaccccc    1067
Ser
335

tctctttgtc ctgtgaatga acttgtgcca aaaaagcc                          1105
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<210> 15
<211> 335
<212> PRT
<213> Caenorhabditis elegans

<400> 15

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Met Ala Gln Thr Lys Pro Ile Ala Glu Gln Met Ala Ala Leu Asn Asn
1               5                10                15


Ser Asp Asp Thr Ser Phe Ala Ala Asp Arg Ser Asn Ser Leu Leu Asn
            20                25                30


Ala Thr Cys Pro Ala Arg Ile Gln Asn Ser Val Asp Gln Arg Lys Ile
        35                40                45


Asn Arg Ser Phe Asn Asp Ser Leu Ser Ser Gly Tyr Ser Gly Lys Trp
    50                55                60


Leu Arg Pro Lys Arg Glu Ala Leu Lys Ile Thr Pro Leu Ala Gln Ile
65                70                75                80


Asp Glu Ala Pro Ala Thr Lys Arg His Ser Ser Ala Lys Asp Lys His
            85                90                95
```

Page 38

```
Thr Glu Tyr Lys Thr Arg Leu Cys Asp Ala Phe Arg Arg Glu Gly Tyr
            100             105             110

Cys Pro Tyr Asn Asp Asn Cys Thr Tyr Ala His Gly Gln Asp Glu Leu
            115             120             125

Arg Val Pro Arg Arg Arg Gln Glu Tyr Tyr Ser Arg Asp Pro Pro Arg
    130             135             140

Glu Arg Arg Asp Ser Arg Ser Arg Arg Asp Asp Val Asp Thr Thr Ile
145             150             155             160

Asn Arg Ser Ser Ser Ser Ala Ser Lys His His Asp Glu Asn Arg Arg
            165             170             175

Pro Ser Asn Asn His Gly Ser Ser Asn Arg Arg Gln Ile Cys His Asn
            180             185             190

Phe Glu Arg Gly Asn Cys Arg Tyr Gly Pro Arg Cys Arg Phe Ile His
    195             200             205

Val Glu Gln Met Gln His Phe Asn Ala Asn Ala Thr Val Tyr Ala Pro
    210             215             220

Pro Ser Ser Asp Cys Pro Pro Pro Ile Ala Tyr Tyr His His His Pro
225             230             235             240

Gln His Gln Gln Gln Phe Leu Pro Phe Pro Met Pro Tyr Phe Leu Ala
            245             250             255

Pro Pro Pro Gln Ala Gln Gln Gly Ala Pro Phe Pro Val Gln Tyr Ile
            260             265             270

Pro Gln Gln His Asp Leu Met Asn Ser Gln Pro Met Tyr Ala Pro Met
    275             280             285

Ala Pro Thr Tyr Tyr Tyr Gln Pro Ile Asn Ser Asn Gly Met Pro Met
    290             295             300

Met Asp Val Thr Ile Asp Pro Asn Ala Thr Gly Gly Ala Phe Glu Val
305             310             315             320

Phe Pro Asp Gly Phe Phe Ser Gln Pro Pro Pro Thr Ile Ile Ser
            325             330             335
```

<210> 16
<211> 2077

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<212>  DNA
<213>  Drosophila melonogaster


<220>
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<222>  (301)..(1614)

<400>  16
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ttttattgtt gcaatgcaat attcgcggaa cgaataacaa caacatacat aactcaatat     120

tcaagtgcaa agcaaataca aatcaaacac aaagaaaaag caacgaaata aagatatata     180

gaaaagaaaa acaaaacgaa aaaattcgca cattttttct gtcttgtcca gtggaaaata     240

caacaaataa acaacaacgg ctaaatcaag ttaacaatct gttcaaaacc aatcaacaaa     300

atg tct gct gat att ctg cag aaa tca aga gag cag gat gat tcg cac     348
Met Ser Ala Asp Ile Leu Gln Lys Ser Arg Glu Gln Asp Asp Ser His
1               5                   10                  15

tac ttc gag cgt ggc gat ata tcc aaa tac gta acg atg aac gat cac     396
Tyr Phe Glu Arg Gly Asp Ile Ser Lys Tyr Val Thr Met Asn Asp His
                20                  25                  30

ttg ggt gat ttc gat tgc aac gag gtg cgc aag gaa ata agg atg ctg     444
Leu Gly Asp Phe Asp Cys Asn Glu Val Arg Lys Glu Ile Arg Met Leu
            35                  40                  45

ctc gcc cac ggc gcc aac ttg gat cag cag cac cag cag cag cca cat     492
Leu Ala His Gly Ala Asn Leu Asp Gln Gln His Gln Gln Gln Pro His
        50                  55                  60

cgc cac cat ggc ggt ctc aca cgc acc att tca cag ccg gcc cag ctc     540
Arg His His Gly Gly Leu Thr Arg Thr Ile Ser Gln Pro Ala Gln Leu
65                  70                  75                  80

atc cag cag cag cag cag caa cac caa cag cag cag cag cag cag cag     588
Ile Gln Gln Gln Gln Gln Gln His Gln Gln Gln Gln Gln Gln Gln Gln
                85                  90                  95

cca cct gtt gcc agt ctg gtg acc atc acc gag aac ctg ggc aac atg     636
Pro Pro Val Ala Ser Leu Val Thr Ile Thr Glu Asn Leu Gly Asn Met
            100                 105                 110

aac ctg cac cga aag ctg gag cga acc caa tcg gag cca ctg ccg cca     684
Asn Leu His Arg Lys Leu Glu Arg Thr Gln Ser Glu Pro Leu Pro Pro
        115                 120                 125

cag cag ccg atg aac aca tcc aga tac aag acc gag ctg tgc cgt ccg     732
Gln Gln Pro Met Asn Thr Ser Arg Tyr Lys Thr Glu Leu Cys Arg Pro
    130                 135                 140

ttc gag gag gcc gga gaa tgc aag tac ggc gag aag tgc cag ttc gcc     780
Phe Glu Glu Ala Gly Glu Cys Lys Tyr Gly Glu Lys Cys Gln Phe Ala
145                 150                 155                 160

cat gga agc cat gag ttg cga aac gtg cac cgt cat ccc aag tac aag     828
His Gly Ser His Glu Leu Arg Asn Val His Arg His Pro Lys Tyr Lys
                165                 170                 175
```

```
acg gaa tac tgc cgc acc ttc cac agc gtg ggc ttc tgt ccc tac gga      876
Thr Glu Tyr Cys Arg Thr Phe His Ser Val Gly Phe Cys Pro Tyr Gly
            180             185                 190

ccg cgc tgt cac ttt gtt cac aat gcg gac gag gcc cgc gcc caa cag      924
Pro Arg Cys His Phe Val His Asn Ala Asp Glu Ala Arg Ala Gln Gln
            195             200                 205

gcg gcc cag gca gcc aag tcc tcc acc cag tcg cag tcg cag tcg cag      972
Ala Ala Gln Ala Ala Lys Ser Ser Thr Gln Ser Gln Ser Gln Ser Gln
    210             215                 220

cag tcg tcg tcg cag aac ttc tcg ccg aag agc aac cag agc agc aat     1020
Gln Ser Ser Ser Gln Asn Phe Ser Pro Lys Ser Asn Gln Ser Ser Asn
225             230                 235                 240

caa agt agc aac agt agc agc agc agc agc agc agc ggc ggc ggc ggt     1068
Gln Ser Ser Asn Ser Ser Ser Ser Ser Ser Ser Ser Gly Gly Gly Gly
                245                 250                 255

ggc ggc ggc aac agc atc aac aac aac aac ggt agc caa ttc tat ctg     1116
Gly Gly Gly Asn Ser Ile Asn Asn Asn Asn Gly Ser Gln Phe Tyr Leu
            260                 265                 270

ccg cta agc cca ccg ctg agc atg agc aca gga tcg gac cgg gaa tcg     1164
Pro Leu Ser Pro Pro Leu Ser Met Ser Thr Gly Ser Asp Arg Glu Ser
            275                 280                 285

ccc acc gga tca ctg tcc ctc agc ccc acc aac tcg ttg acc agc ttc     1212
Pro Thr Gly Ser Leu Ser Leu Ser Pro Thr Asn Ser Leu Thr Ser Phe
    290                 295                 300

ccg ttc cac gat gcc ctg cag cat gga tat ttg gca tcg aat ggc gcc     1260
Pro Phe His Asp Ala Leu Gln His Gly Tyr Leu Ala Ser Asn Gly Ala
305                 310                 315                 320

aag agc aac agt tcc gcc tcg tcc aca tca tcg gcc tct gga atg ggt     1308
Lys Ser Asn Ser Ser Ala Ser Ser Thr Ser Ser Ala Ser Gly Met Gly
                325                 330                 335

ctg ggc atg agc atg ggc atc ggc cag ggc atg atc atc ggt cag ggt     1356
Leu Gly Met Ser Met Gly Ile Gly Gln Gly Met Ile Ile Gly Gln Gly
                340                 345                 350

ttg gga atg gga cat cat gga ccg gcc aca ccg ccg gag agc ccc aat     1404
Leu Gly Met Gly His His Gly Pro Ala Thr Pro Pro Glu Ser Pro Asn
                355                 360                 365

gtg ccc ata tcg cca gtg cat aca cca cca ccg tac gat gtg gtg gtc     1452
Val Pro Ile Ser Pro Val His Thr Pro Pro Pro Tyr Asp Val Val Val
370                 375                 380

agt gga tct gga gcg ggc aac aat agc gtt ggc agc aag cag ctc ctg     1500
Ser Gly Ser Gly Ala Gly Asn Asn Ser Val Gly Ser Lys Gln Leu Leu
385                 390                 395                 400

cag aag agc gtc agc aca ccg atg cag cag gag gat acg ccc agg ttg     1548
Gln Lys Ser Val Ser Thr Pro Met Gln Gln Glu Asp Thr Pro Arg Leu
                405                 410                 415

ccg gtt ttc aac cgt ctc agc tcc ggt gtg gag gcc tac cag cag cag     1596
Pro Val Phe Asn Arg Leu Ser Ser Gly Val Glu Ala Tyr Gln Gln Gln
            420                 425                 430
```

```
tcc aat ttg gga ctc taa acgcgtggca gtctgcgaaa caaaattgaa          1644
Ser Asn Leu Gly Leu
        435

ttgaaacacc atccagcatc caactcacgc ccatccaagc atccctccat caacaaacca   1704

gcatccttga caaaatctca gtaacgacca aaccatggaa actgaaaaca aaactactct   1764

cgcagtccaa tttgaaacgc aaatatgcca aggcaaatgg atttccggtg gcgtaacttc   1824

gttgcagaat aagtgtgtat caagtatacg ccaaacacag acacccctta attatgaacc   1884

gatccttgat atcaattctc tcattgctgt gacagtcaaa cgtaatcgtt atacaataat   1944

cgttatatga gaaggaccga attacggact actacgggac aattagttag atagatacgt   2004

aaatgacaaa caaacaatcc aagcaaacga tgatcttaaa ctataactaa atactaaaaa   2064

ctaaaaacta aca                                                     2077
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<210> 17
<211> 437
<212> PRT
<213> Drosophila melonogaster

<400> 17

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Met Ser Ala Asp Ile Leu Gln Lys Ser Arg Glu Gln Asp Asp Ser His
1               5                  10                  15


Tyr Phe Glu Arg Gly Asp Ile Ser Lys Tyr Val Thr Met Asn Asp His
            20                  25                  30


Leu Gly Asp Phe Asp Cys Asn Glu Val Arg Lys Glu Ile Arg Met Leu
        35                  40                  45


Leu Ala His Gly Ala Asn Leu Asp Gln Gln His Gln Gln Gln Pro His
    50                  55                  60


Arg His His Gly Gly Leu Thr Arg Thr Ile Ser Gln Pro Ala Gln Leu
65                  70                  75                  80


Ile Gln Gln Gln Gln Gln Gln His Gln Gln Gln Gln Gln Gln Gln Gln
                85                  90                  95


Pro Pro Val Ala Ser Leu Val Thr Ile Thr Glu Asn Leu Gly Asn Met
            100                 105                 110


Asn Leu His Arg Lys Leu Glu Arg Thr Gln Ser Glu Pro Leu Pro Pro
        115                 120                 125


Gln Gln Pro Met Asn Thr Ser Arg Tyr Lys Thr Glu Leu Cys Arg Pro
    130                 135                 140
```

Phe Glu Glu Ala Gly Glu Cys Lys Tyr Gly Glu Lys Cys Gln Phe Ala
145   150   155   160

His Gly Ser His Glu Leu Arg Asn Val His Arg His Pro Lys Tyr Lys
                165   170   175

Thr Glu Tyr Cys Arg Thr Phe His Ser Val Gly Phe Cys Pro Tyr Gly
            180   185   190

Pro Arg Cys His Phe Val His Asn Ala Asp Glu Ala Arg Ala Gln Gln
        195   200   205

Ala Ala Gln Ala Ala Lys Ser Ser Thr Gln Ser Gln Ser Gln Ser Gln
    210   215   220

Gln Ser Ser Ser Gln Asn Phe Ser Pro Lys Ser Asn Gln Ser Ser Asn
225   230   235   240

Gln Ser Ser Asn Ser Ser Ser Ser Ser Ser Ser Gly Gly Gly Gly
            245   250   255

Gly Gly Gly Asn Ser Ile Asn Asn Asn Asn Gly Ser Gln Phe Tyr Leu
            260   265   270

Pro Leu Ser Pro Pro Leu Ser Met Ser Thr Gly Ser Asp Arg Glu Ser
        275   280   285

Pro Thr Gly Ser Leu Ser Leu Ser Pro Thr Asn Ser Leu Thr Ser Phe
    290   295   300

Pro Phe His Asp Ala Leu Gln His Gly Tyr Leu Ala Ser Asn Gly Ala
305   310   315   320

Lys Ser Asn Ser Ser Ala Ser Ser Thr Ser Ser Ala Ser Gly Met Gly
            325   330   335

Leu Gly Met Ser Met Gly Ile Gly Gln Gly Met Ile Ile Gly Gln Gly
            340   345   350

Leu Gly Met Gly His His Gly Pro Ala Thr Pro Pro Glu Ser Pro Asn
        355   360   365

Val Pro Ile Ser Pro Val His Thr Pro Pro Pro Tyr Asp Val Val Val
    370   375   380

Ser Gly Ser Gly Ala Gly Asn Asn Ser Val Gly Ser Lys Gln Leu Leu

```
385                     390              395                      400
```

```
Gln Lys Ser Val Ser Thr Pro Met Gln Gln Glu Asp Thr Pro Arg Leu
                405                  410                  415


Pro Val Phe Asn Arg Leu Ser Ser Gly Val Glu Ala Tyr Gln Gln Gln
            420              425              430


Ser Asn Leu Gly Leu
        435
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<210>   18
<211>   3922
<212>   DNA
<213>   Homo sapiens


<220>
<221>   CDS
<222>   (774)..(1733)

<400>   18
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ggtgggctag ggctgagtgg aaatggtgag agagattatt gtagaaaata tctcttccgg    120

gaacttaggg caaagagttt tattttcagg aatcacatcc ctgtctcccc caacctcaga    180

ccaggccccc aatctcctcc ccacaagaaa aagcaaaggc agtctgaaaa cctgttgcca    240

aaggaaggga acacttctga aggaggaagt tgagagtctt aggccaggtc ttgaaggagg    300

gggtatcaat taagcagaga ctgattggaa ggggacctaa cgtgcctatg atagactcct    360

ttctgaggtt tacctgtttt tgtcgcgggc ggtggcgggg cgggtgcggt aatctagaga    420

ggtctgggtt gtgtgagata ttttgagttg aagaatctat ttgactagta aaaaagttga    480

actttaaagt ggtagctttg gggacagagg acatgggggt tgcattgcag gagtcagcat    540

ggagcagggt gcttgtcaca cagtttggat cttgtggttt cttacgcatg gggccaaaat    600

aaacccaggt gaatggccta tgggagggag agagggaagg gagcttgcta gagccgaggt    660

agagatgagt tctttgagaa agagcgggcg tttgtgattg tgtaggggc tgcccatagt     720

ggacatcctg gtggatgtcc tctgtcctta ccatccttct cttctctctc cag ggt       776
                                                          Gly
                                                          1

aac aag atg ctc aac tat agt gct ccc agt gca ggg ggt tgc ctg ctg      824
Asn Lys Met Leu Asn Tyr Ser Ala Pro Ser Ala Gly Gly Cys Leu Leu
          5               10                  15

gac aga aag gca gtg ggc acc cct gct ggt ggg ggc ttc cct cgg agg      872
Asp Arg Lys Ala Val Gly Thr Pro Ala Gly Gly Gly Phe Pro Arg Arg
    20              25                  30

cac tca gtc acc ctg ccc agc tcc aag ttc cac cag aac cag ctc ctc      920
```

```
His Ser Val Thr Leu Pro Ser Ser Lys Phe His Gln Asn Gln Leu Leu
    35          .        40              45

agc agc ctc aag ggt gag cca gcc ccc gct ctg agc tcg cga gac agc         968
Ser Ser Leu Lys Gly Glu Pro Ala Pro Ala Leu Ser Ser Arg Asp Ser
50              55              60                  65

cgc ttc cga gac cgc tcc ttc tcg gaa ggg ggc gag cgg ctg ctg ccc        1016
Arg Phe Arg Asp Arg Ser Phe Ser Glu Gly Gly Glu Arg Leu Leu Pro
                70              75                  80

acc cag aag cag ccc ggg ggc ggc cag gtc aac tcc agc cgc tac aag        1064
Thr Gln Lys Gln Pro Gly Gly Gly Gln Val Asn Ser Ser Arg Tyr Lys
            85                  90              95

acg gag ctg tgc cgc ccc ttt gag gaa aac ggt gcc tgt aag tac ggg        1112
Thr Glu Leu Cys Arg Pro Phe Glu Glu Asn Gly Ala Cys Lys Tyr Gly
        100             105                 110

gac aag tgc cag ttc gca cac ggc atc cac gag ctc cgc agc ctg acc        1160
Asp Lys Cys Gln Phe Ala His Gly Ile His Glu Leu Arg Ser Leu Thr
        115             120                 125

cgc cac ccc aag tac aag acg gag ctg tgc cgc acc ttc cac acc atc        1208
Arg His Pro Lys Tyr Lys Thr Glu Leu Cys Arg Thr Phe His Thr Ile
130             135                 140                 145

ggc ttt tgc ccc tac ggg ccc cgc tgc cac ttc atc cac aac gct gaa        1256
Gly Phe Cys Pro Tyr Gly Pro Arg Cys His Phe Ile His Asn Ala Glu
                150             155                 160

gag cgc cgt gcc ctg gcc ggg gcc cgg gac ctc tcc gct gac cgt ccc        1304
Glu Arg Arg Ala Leu Ala Gly Ala Arg Asp Leu Ser Ala Asp Arg Pro
            165             170                 175

cgc ctc cag cat agc ttt agc ttt gct ggg ttt ccc agt gcc gct gcc        1352
Arg Leu Gln His Ser Phe Ser Phe Ala Gly Phe Pro Ser Ala Ala Ala
            180             185                 190

acc gcc gct gcc acc ggg ctg ctg gac agc ccc acg tcc atc acc cca        1400
Thr Ala Ala Ala Thr Gly Leu Leu Asp Ser Pro Thr Ser Ile Thr Pro
195             200                 205

ccc cct att ctg agc gcc gat gac ctc ctg ggc tca cct acc ctg ccc        1448
Pro Pro Ile Leu Ser Ala Asp Asp Leu Leu Gly Ser Pro Thr Leu Pro
210             215                 220                 225

gat ggc acc aat aac cct ttt gcc ttc tcc agc cag gag ctg gca agc        1496
Asp Gly Thr Asn Asn Pro Phe Ala Phe Ser Ser Gln Glu Leu Ala Ser
                230             235                 240

ctc ttt gcc cct agc atg ggg ctg ccc ggg ggt ggc tcc ccg acc acc        1544
Leu Phe Ala Pro Ser Met Gly Leu Pro Gly Gly Gly Ser Pro Thr Thr
            245             250                 255

ttc ctc ttc cgg ccc atg tcc gag tcc cct cac atg ttt gac tct ccc        1592
Phe Leu Phe Arg Pro Met Ser Glu Ser Pro His Met Phe Asp Ser Pro
            260             265                 270

ccc agc cct cag gat tct ctc tcg gac cag gag ggc tac ctg agc agc        1640
Pro Ser Pro Gln Asp Ser Leu Ser Asp Gln Glu Gly Tyr Leu Ser Ser
275             280                 285
```

```
tcc agc agc agc cac agt ggc tca gac tcc ccg acc ttg gac aac tca      1688
Ser Ser Ser Ser His Ser Gly Ser Asp Ser Pro Thr Leu Asp Asn Ser
290             295             300                 305

aga cgc ctg ccc atc ttc agc aga ctt tcc atc tca gat gac taa          1733
Arg Arg Leu Pro Ile Phe Ser Arg Leu Ser Ile Ser Asp Asp
            310             315
```

gccagggtag ggagggacct cctgcctact ccagcccta ccctgcaccc acatcccata   1793

ccctcttctc cctacccatc ccattcccca caggccctac attaacaagg ttaagctcaa   1853

cccctttccc ccagcacctc agaatgtgcc ctccctctcc ccctcataac cccacctaac   1913

ataaggacaa gtcaatttgt cagtagcttc ttctggcttg aaaccccctc cctggatttt   1973

atagcccact taccatgcat aacagacaag tcccatattt tgtcagtaga tgcctttttt   2033

tttcgcttaa gccttaagtg ccaaatcaca agagaaaaag cagtaacagt ttacagaagc   2093

aacttagtgc cttgtaatct aactttgtca ctgtgactac attacctctt cagcgccaga   2153

gggcacccgt gggcctcccg gagcctctgc ccatggcggg gtggagaccc ggaaccagca   2213

gcccccctcca ctggcgacac aactgcacct tccctcattt cagtctcccg cacacttatt   2273

cctcctcccc tcttcccggt ggcacctctc cacctgtacc gcccccacc cccccaccc   2333

ctgccccttg gaagagttgt tgccagacca gggttttggg ggaaacctgt cttgacattc   2393

aaaacctttt tcttcccgat ctgaacccct gttgactaat cttgcctggg tttgtgtagg   2453

tctgcaggaa ggaaggctga aaaagcggac gaagattttg acttaagtgg actttgtgat   2513

ttaattttt cttttttta agtggggagg aaggggaagc tagatggact aggagagact   2573

tgattttggt gctaaagttc cccagttcat atgtgacatc ttttaaaaa aaataacaac   2633

aaaaaaaaaa tgagagaaaa gctaaaaaaa aaaagtaag gggtgagcag ttaatggtat   2693

tcattccaca tacaatatct gtgtaaaacg atttcctgta gaagtagctt taatggtttt   2753

tgctctagaa taccgtaggt ctatccttag agcactcacg ccatgctttc ttccctgggt   2813

tttaaacttc atataacttt cagaaattgg agagcaaaaa ttttgcttgt cactgcacat   2873

caatataaaa aagcttattt aacttatcaa aacgtattta ttgccaaact atgctttttt   2933

ttgttaattt tgttcatatt tatcgggatg acaaatccat agaatatatt cttttatgtt   2993

aaattatgat cttcatatta atcttaaaat tttgtgacgt gtctttttcc ttttttccca   3053

cagttttaat atattattct tcaacgacat tttttgtaac tttacacttt tttggttatt   3113

ttattttaaa aaaatgaaaa attaatttaa aaaaatgcaa aaaactgttg gattatttat   3173

tttagaaatt ccccccttttg tgttggactg caaattgagt ttctttctct ttaggccttt   3233

cacaactagg actgagaatg tatgtaaaag ttctgtgaca gtacagaagg aaaacaactt   3293

tttatgtata gcttctaaaa ggggaaaaaa aaaaaaaga gaaacccttt gacttccacg   3353

tgcccatctc aagacattcc actcacagat ttgaggttct ggattccagg tctggagttt   3413

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tccaatgtta atgtaaacag aactggcaca cacacattaa gatgaatgta attattattc   3473

ctcttgctgg tcactaccgt cgctttctat ttctctttct ttgtgtgaat ttatttaaaa   3533

gaaaaaaaac tttttgtaac gactatttgc agtttaaaaa tcaataaacc ccgttttttc   3593

aagaaacatt gatggtggag ctggtttttac ttggttttgg tttgactttg ccagtaaggt   3653

tctcccttg tataccttgc aagtcctggg gaggggagg cggagagaga gggctgtggc      3713

tgtgggtggc ggcatctctc atccctataa gctaagccta tagctccctt ccttgatgct   3773

ggcagtttgc tgcacttaga ggggacgggg tggaggtttt ctgcaaagga gcctgtactt   3833

cctgctgtat tacttctgaa aagactgtgc agtgtgttag ttgttggctg aatagcagcg   3893

ggcccagcct tgccgacact tgtgtggcc                                     3922
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<210> 19
<211> 319
<212> PRT
<213> Homo sapiens

<400> 19

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Gly Asn Lys Met Leu Asn Tyr Ser Ala Pro Ser Ala Gly Gly Cys Leu
1               5                   10                  15


Leu Asp Arg Lys Ala Val Gly Thr Pro Ala Gly Gly Gly Phe Pro Arg
            20                  25                  30


Arg His Ser Val Thr Leu Pro Ser Ser Lys Phe His Gln Asn Gln Leu
        35                  40                  45


Leu Ser Ser Leu Lys Gly Glu Pro Ala Pro Ala Leu Ser Ser Arg Asp
    50                  55                  60


Ser Arg Phe Arg Asp Arg Ser Phe Ser Glu Gly Gly Glu Arg Leu Leu
65                  70                  75                  80


Pro Thr Gln Lys Gln Pro Gly Gly Gly Gln Val Asn Ser Ser Arg Tyr
                85                  90                  95


Lys Thr Glu Leu Cys Arg Pro Phe Glu Glu Asn Gly Ala Cys Lys Tyr
            100                 105                 110


Gly Asp Lys Cys Gln Phe Ala His Gly Ile His Glu Leu Arg Ser Leu
        115                 120                 125


Thr Arg His Pro Lys Tyr Lys Thr Glu Leu Cys Arg Thr Phe His Thr
    130                 135                 140
```

```
Ile Gly Phe Cys Pro Tyr Gly Pro Arg Cys His Phe Ile His Asn Ala
145                 150                 155                 160


Glu Glu Arg Arg Ala Leu Ala Gly Ala Arg Asp Leu Ser Ala Asp Arg
                165                 170                 175


Pro Arg Leu Gln His Ser Phe Ser Phe Ala Gly Phe Pro Ser Ala Ala
            180                 185                 190


Ala Thr Ala Ala Ala Thr Gly Leu Leu Asp Ser Pro Thr Ser Ile Thr
        195                 200                 205


Pro Pro Pro Ile Leu Ser Ala Asp Asp Leu Leu Gly Ser Pro Thr Leu
    210                 215                 220


Pro Asp Gly Thr Asn Asn Pro Phe Ala Phe Ser Ser Gln Glu Leu Ala
225                 230                 235                 240


Ser Leu Phe Ala Pro Ser Met Gly Leu Pro Gly Gly Gly Ser Pro Thr
                245                 250                 255


Thr Phe Leu Phe Arg Pro Met Ser Glu Ser Pro His Met Phe Asp Ser
                260                 265                 270


Pro Pro Ser Pro Gln Asp Ser Leu Ser Asp Gln Glu Gly Tyr Leu Ser
            275                 280                 285


Ser Ser Ser Ser Ser His Ser Gly Ser Asp Ser Pro Thr Leu Asp Asn
    290                 295                 300


Ser Arg Arg Leu Pro Ile Phe Ser Arg Leu Ser Ile Ser Asp Asp
305                 310                 315
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tcattactta ttaggacatt cgggaaaaat atacatatat ggcccacttc tctcacatct     120

cttttagggt ctgtgccaat ggcacccaaa tttttcttct ttcttttttcg ctcgtattct     180

ctcacgctct tgatcagtgt gagcagttac taatatactg gatcagagaa cattaactca     240
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aaggttgata gtgtagatca ttggacatag tgtgacggtt ttgcactctt gttgcgcttg   300

ctctcttaac aagtcacatc ttatttagcc tcttcaccca taagttgatt gtaaagccgt   360

agaaccctat atcacagtct cttcggcaac tcaaccaata agaactatta aggattaaca   420

ctagcc atg atg ccg aat gtt gct cca aac agc tac tat tta aac ata   468
       Met Met Pro Asn Val Ala Pro Asn Ser Tyr Tyr Leu Asn Ile
       1   5   10

ccg aat gcc aat tcg acc tca acg act acg tcc tcg atc ttt tct gat   516
Pro Asn Ala Asn Ser Thr Ser Thr Thr Thr Ser Ser Ile Phe Ser Asp
15   20   25   30

ctc aac aag gag tac gag tca aag att aaa gaa atc gaa gaa tat tat   564
Leu Asn Lys Glu Tyr Glu Ser Lys Ile Lys Glu Ile Glu Glu Tyr Tyr
                35   40   45

ata aag aca ctg ctc aat gaa aat acc gat aat gat gac agc agc agc   612
Ile Lys Thr Leu Leu Asn Glu Asn Thr Asp Asn Asp Asp Ser Ser Ser
            50   55   60

tcc gag ggg cat aat ata aat gaa acg gac att tta agt gaa tac tca   660
Ser Glu Gly His Asn Ile Asn Glu Thr Asp Ile Leu Ser Glu Tyr Ser
        65   70   75

cca agg cct tct cct tgg tta cca tcc aaa cca aac tgt tat cat ccg   708
Pro Arg Pro Ser Pro Trp Leu Pro Ser Lys Pro Asn Cys Tyr His Pro
        80   85   90

ttg gga gat ttt aaa gac ttg atc ata tca gat tcc aga cct aca aat   756
Leu Gly Asp Phe Lys Asp Leu Ile Ile Ser Asp Ser Arg Pro Thr Asn
95   100   105   110

aca tta cct att aat aac cct ttc gca ggc aat aat aac atc tca aca   804
Thr Leu Pro Ile Asn Asn Pro Phe Ala Gly Asn Asn Asn Ile Ser Thr
                115   120   125

ctt gct aca act gag aaa aaa cgt aag aaa agg tca ctc gaa gtt aga   852
Leu Ala Thr Thr Glu Lys Lys Arg Lys Lys Arg Ser Leu Glu Val Arg
            130   135   140

gtt aac cct act tac acg aca agt gca ttt tca tta ccc ctg aca gcg   900
Val Asn Pro Thr Tyr Thr Thr Ser Ala Phe Ser Leu Pro Leu Thr Ala
            145   150   155

gag aat tta caa aaa cta tct cag gtg gat tct cag tct act gga ctt   948
Glu Asn Leu Gln Lys Leu Ser Gln Val Asp Ser Gln Ser Thr Gly Leu
        160   165   170

cca tac aca ctt cca att cag aaa aca aca aaa ctg gaa cct tgt aga   996
Pro Tyr Thr Leu Pro Ile Gln Lys Thr Thr Lys Leu Glu Pro Cys Arg
175   180   185   190

agg gca cct ttg cag ctt cct caa tta gtc aat aag acc tta tac aaa   1044
Arg Ala Pro Leu Gln Leu Pro Gln Leu Val Asn Lys Thr Leu Tyr Lys
                195   200   205

act gag ctc tgt gaa tct ttt act att aaa ggc tat tgt aag tat gga   1092
Thr Glu Leu Cys Glu Ser Phe Thr Ile Lys Gly Tyr Cys Lys Tyr Gly
            210   215   220

aat aaa tgc caa ttt gct cat ggt ctt aat gaa ctg aaa ttc aag aaa   1140
                                Page 49

```
Asn Lys Cys Gln Phe Ala His Gly Leu Asn Glu Leu Lys Phe Lys Lys
        225                 230                 235
```

```
aaa tca aac aat tat aga act aaa cct tgc ata aat tgg tcg aag tta      1188
Lys Ser Asn Asn Tyr Arg Thr Lys Pro Cys Ile Asn Trp Ser Lys Leu
        240                 245                 250
```

```
ggc tac tgt ccg tac ggt aag cgt tgc tgt ttc aaa cac ggt gat gat      1236
Gly Tyr Cys Pro Tyr Gly Lys Arg Cys Cys Phe Lys His Gly Asp Asp
255                 260                 265                 270
```

```
aag gac gtt gaa ata tat caa aat gct aac gat gga aga agt aag gat      1284
Lys Asp Val Glu Ile Tyr Gln Asn Ala Asn Asp Gly Arg Ser Lys Asp
                275                 280                 285
```

```
acg gcg ttg act cca ctt cct act tcc cta gcc cca agc aac aac gat      1332
Thr Ala Leu Thr Pro Leu Pro Thr Ser Leu Ala Pro Ser Asn Asn Asp
            290                 295                 300
```

```
aat atc act aat ttg agt aag cct agg aac tta cat act agt gtt aaa      1380
Asn Ile Thr Asn Leu Ser Lys Pro Arg Asn Leu His Thr Ser Val Lys
            305                 310                 315
```

```
gca ttg caa agg atg act tgg tag tcggtcaaca acaaagccct ttgaatattt     1434
Ala Leu Gln Arg Met Thr Trp
320                 325
```

```
ggcgtatttc tgctgcctct ccttatttat ttattcatta tcgttttcat atttatttca    1494
```

```
gtcacaaaac aaaatt                                                     1510
```

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Met Met Pro Asn Val Ala Pro Asn Ser Tyr Tyr Leu Asn Ile Pro Asn
1               5                   10                  15
```

```
Ala Asn Ser Thr Ser Thr Thr Thr Ser Ser Ile Phe Ser Asp Leu Asn
            20                  25                  30
```

```
Lys Glu Tyr Glu Ser Lys Ile Lys Glu Ile Glu Glu Tyr Tyr Ile Lys
        35                  40                  45
```

```
Thr Leu Leu Asn Glu Asn Thr Asp Asn Asp Asp Ser Ser Ser Ser Glu
    50                  55                  60
```

```
Gly His Asn Ile Asn Glu Thr Asp Ile Leu Ser Glu Tyr Ser Pro Arg
65                  70                  75                  80
```

```
Pro Ser Pro Trp Leu Pro Ser Lys Pro Asn Cys Tyr His Pro Leu Gly
            85                  90                  95
```

Asp Phe Lys Asp Leu Ile Ile Ser Asp Ser Arg Pro Thr Asn Thr Leu
            100   105   110

Pro Ile Asn Asn Pro Phe Ala Gly Asn Asn Asn Ile Ser Thr Leu Ala
            115   120   125

Thr Thr Glu Lys Lys Arg Lys Lys Arg Ser Leu Glu Val Arg Val Asn
        130   135   140

Pro Thr Tyr Thr Thr Ser Ala Phe Ser Leu Pro Leu Thr Ala Glu Asn
145   150   155   160

Leu Gln Lys Leu Ser Gln Val Asp Ser Gln Ser Thr Gly Leu Pro Tyr
                165   170   175

Thr Leu Pro Ile Gln Lys Thr Thr Lys Leu Glu Pro Cys Arg Arg Ala
            180   185   190

Pro Leu Gln Leu Pro Gln Leu Val Asn Lys Thr Leu Tyr Lys Thr Glu
            195   200   205

Leu Cys Glu Ser Phe Thr Ile Lys Gly Tyr Cys Lys Tyr Gly Asn Lys
    210   215   220

Cys Gln Phe Ala His Gly Leu Asn Glu Leu Lys Phe Lys Lys Lys Ser
225   230   235   240

Asn Asn Tyr Arg Thr Lys Pro Cys Ile Asn Trp Ser Lys Leu Gly Tyr
                245   250   255

Cys Pro Tyr Gly Lys Arg Cys Cys Phe Lys His Gly Asp Asp Lys Asp
            260   265   270

Val Glu Ile Tyr Gln Asn Ala Asn Asp Gly Arg Ser Lys Asp Thr Ala
            275   280   285

Leu Thr Pro Leu Pro Thr Ser Leu Ala Pro Ser Asn Asn Asp Asn Ile
    290   295   300

Thr Asn Leu Ser Lys Pro Arg Asn Leu His Thr Ser Val Lys Ala Leu
305   310   315   320

Gln Arg Met Thr Trp
                325